Customer Care Solutions
Technical Documentation

Service Software Instructions

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Quick Guide for Phoenix Service SW Installation

Phoenix Installation Steps in Brief

DCT-4 generation Test and Service Software is called “Phoenix”

These are the basic steps to install the Phoenix:

- Connect a DK2 Dongle or FLS-4S POS Flash Device.
- Install the Phoenix Service SW.
- Install the Data Package for Phoenix.
- Configure users.
- Manage connection settings (depends on the tools you are using).

Phoenix is now ready for FLS-4S Point Of Sales Flash Device use.

If you use FPS-8:

- Update FPS-8 SW.
- Activate FPS-8.
- Update JBV-1 Docking Station SW (only when needed).

Phoenix is now ready to be used also with FPS-8 flash prommer and other tools.

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The Phoenix Service Software installation contains:

- Service software support for all phone models included in the package
- Flash update package files for FPS-8* and FLS-4S programming devices
- All needed drivers for: DK2 dongle
  FLS-4S point of sales flash device
  USB devices

Separate installation packages for flash update files and drivers are also available, but it is not necessary to use them unless updates appear between Phoenix Service SW releases. If separate update packages are used, they should be used after Phoenix and data packages have been installed.

The phone model specific data package includes all changing product specific data:

- Product software Binary files
- Files for type label printing
- Validation file for the Faultlog repair data reporting system
- All product specific configuration files for Phoenix software components

Please refer to Service Manual and Technical Bulletins for more information concerning phone model specific service tools and equipment setup.

Phoenix Service SW and phone data packages should only be used as complete installation packages. Uninstallation should be made from Windows Control Panel.

Phoenix Service SW

Before Installation

- Check that a Dongle is attached to the parallel port of your computer.
- Download the installation package (e.g. ***phoenix_service_sw_a12_2003_50_6_35.exe***) to your computer (e.g. C:\TEMP).
- Close all other programs.
- Run the application file (e.g. ***phoenix_service_sw_a12_2003_50_6_35.exe***) and follow instructions on the screen.

Administrator rights may be required to be able to install Phoenix depending on the Operating System.

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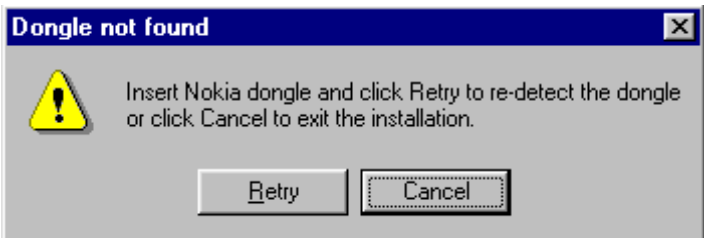
If uninstalling or rebooting is needed at any point, you will be prompted by the Install Shield program.

If at any point during installation you get this message, the dongle is not found and installation can not continue.

Possible reasons may be defective or too old PKD-1Dongle (five digit serial number Dongle when used with FPS-8 Prommer) or that the **FLS-4S** POS Flash Dongle is defective or power to it is not supplied by external charger.

Check the COM /parallel ports used first! After correcting the problem, installation can be re-started.


Dongle not found
Insert Nokia dongle and click Retry to re-detect the dongle or click Cancel to exit the installation.
Retry
Cancel

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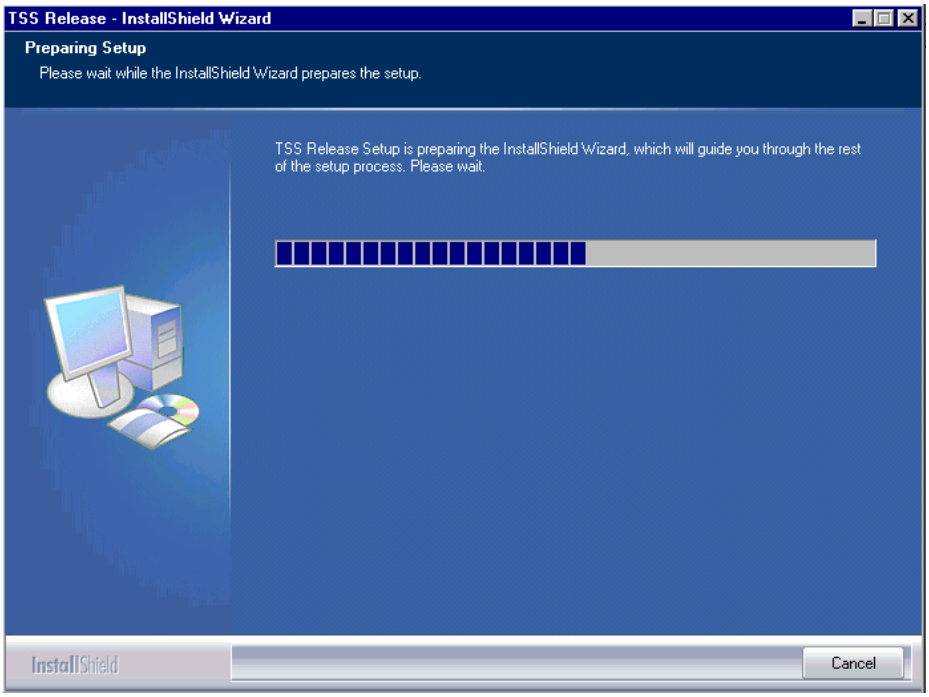
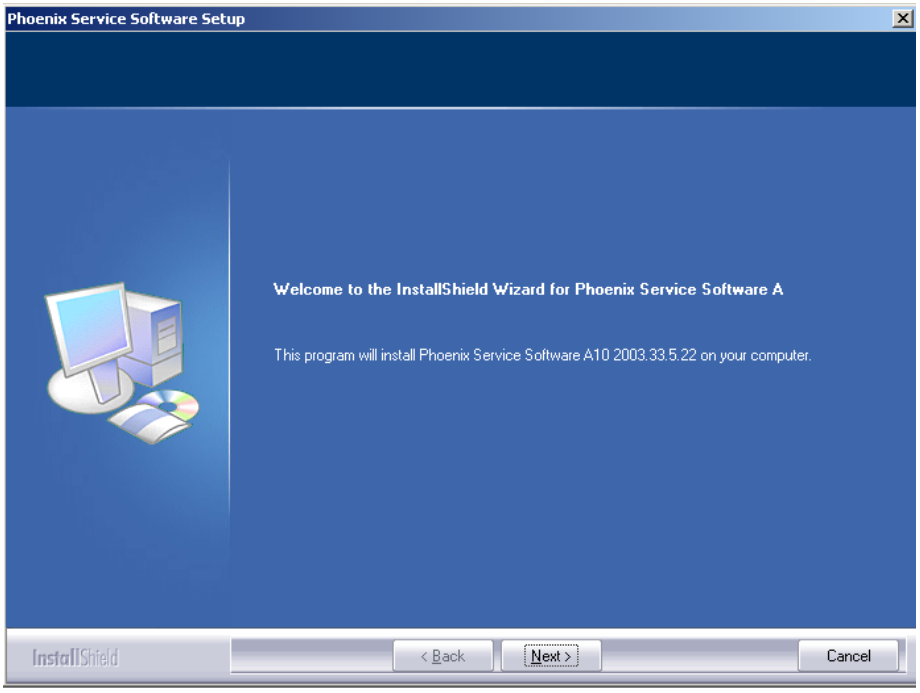
Installing Phoenix

Run the ***phoenix_service_sw_a12_2003_50_6_35.exe*** to start the installation. Install Shield will prepare.


TSS Release - InstallShield Wizard
Preparing Setup
Please wait while the InstallShield Wizard prepares the setup.
TSS Release Setup is preparing the InstallShield Wizard, which will guide you through the rest of the setup process. Please wait.
InstallShield
Cancel

Click "Next" in the Welcome dialog to continue.


Phoenix Service Software Setup
Welcome to the InstallShield Wizard for Phoenix Service Software A
This program will install Phoenix Service Software A10 2003.33.5.22 on your computer.
InstallShield
< Back
Next >
Cancel

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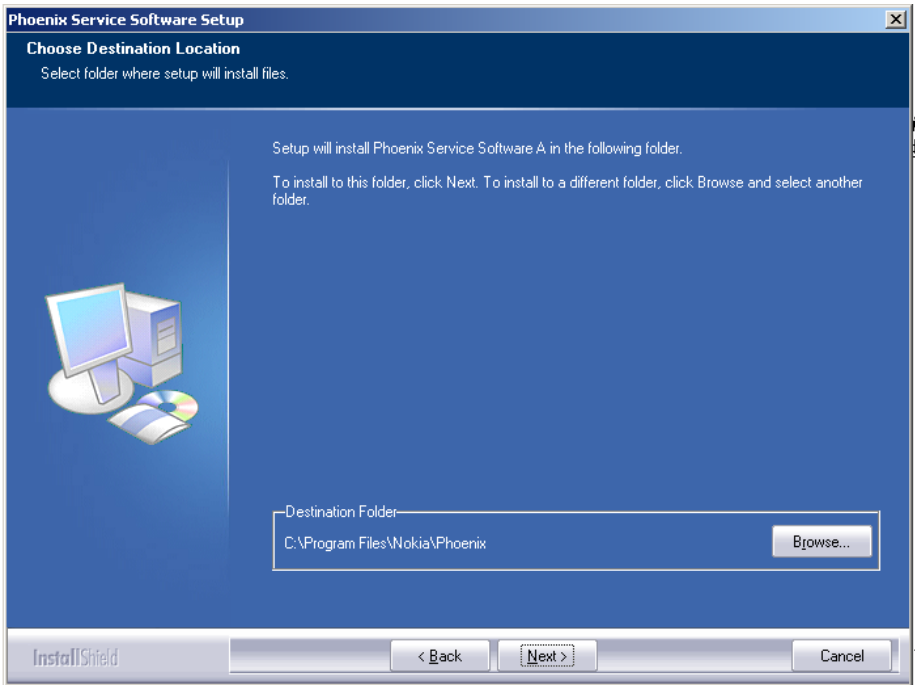
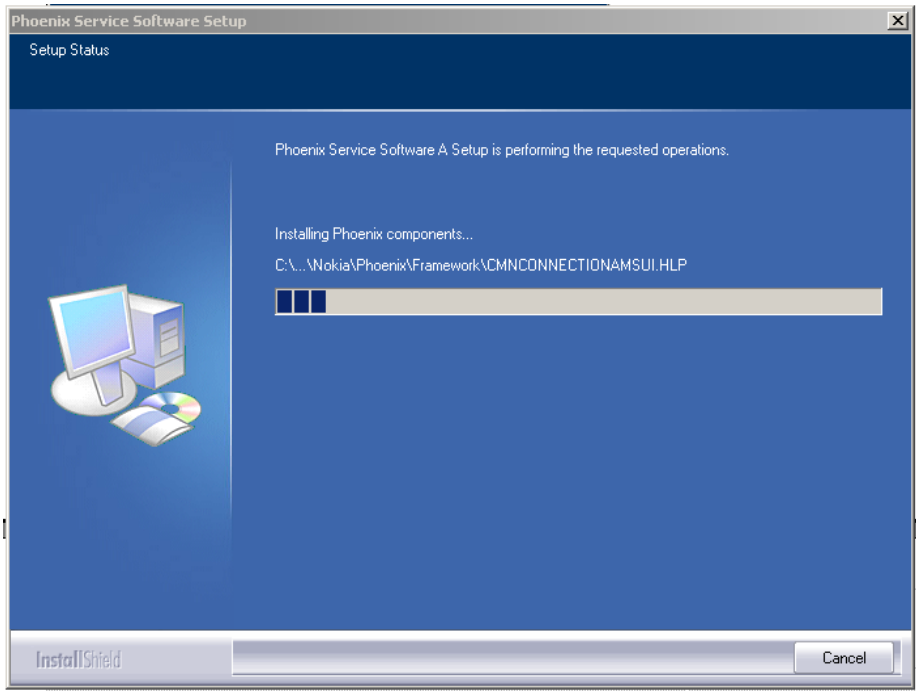
Choose the destination folder, it is recommended to use the default folder *C:\ProgramFiles\Nokia\Phoenix*.

Choose “Next” to continue. You may choose another location by selecting “Browse” (not recommended).


Phoenix Service Software Setup
Choose Destination Location
Select folder where setup will install files.
Setup will install Phoenix Service Software A in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\Nokia\Phoenix
Browse...
InstallShield
< Back
Next >
Cancel

Setup copies the components, progress of the setup is shown. Please wait.



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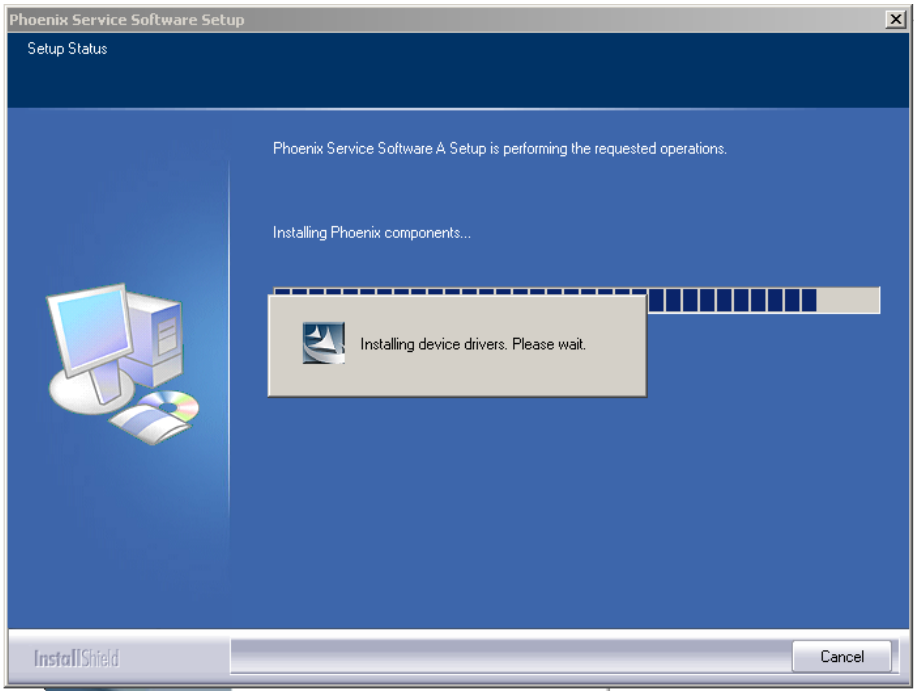
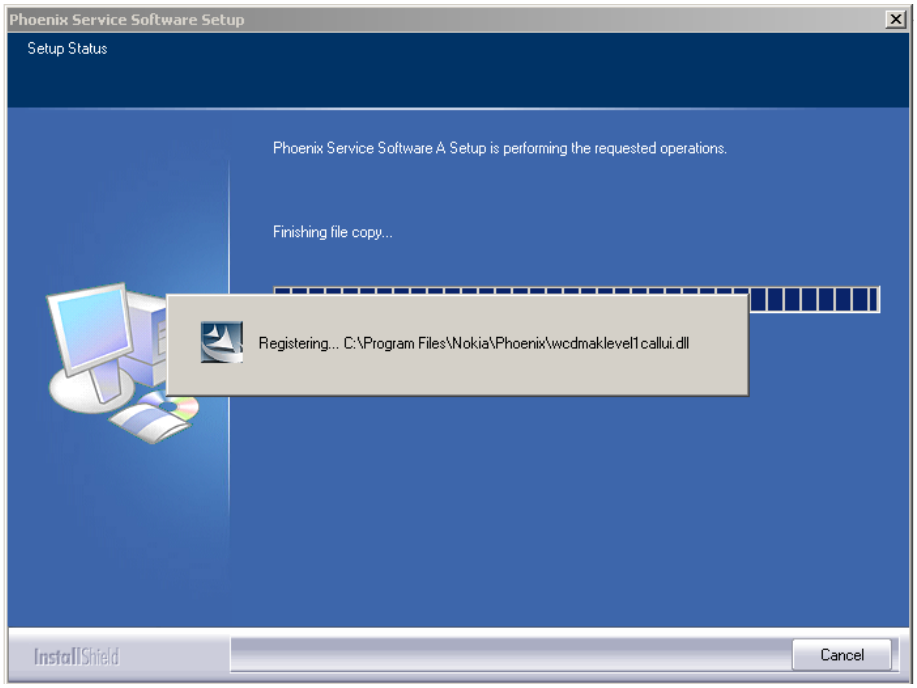
Drivers will be installed and updated, please wait. The process may take several minutes to complete.



If the operating system does not require rebooting (Windows 2000, XP) the PC components are registered right away.



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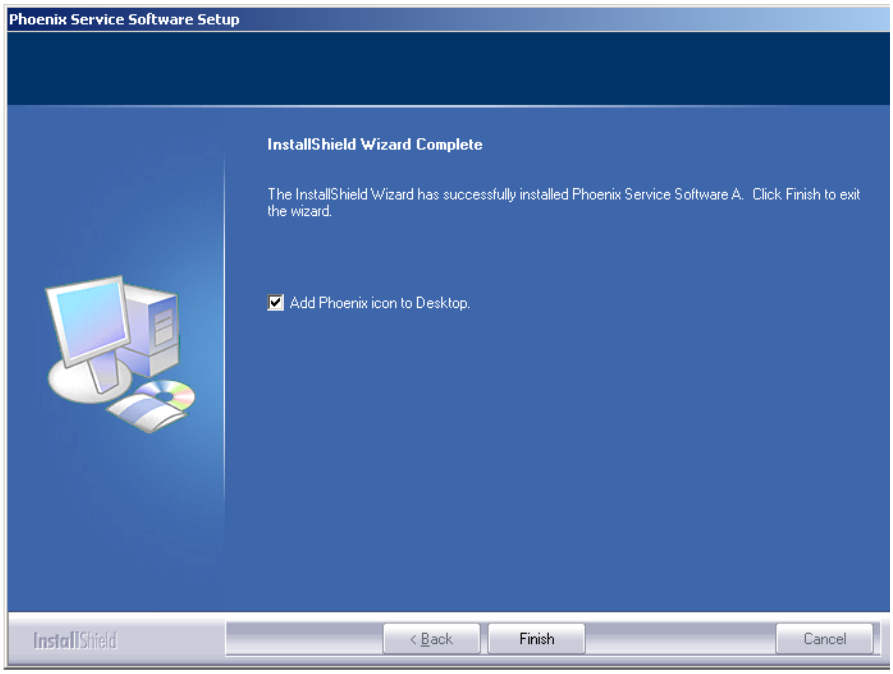
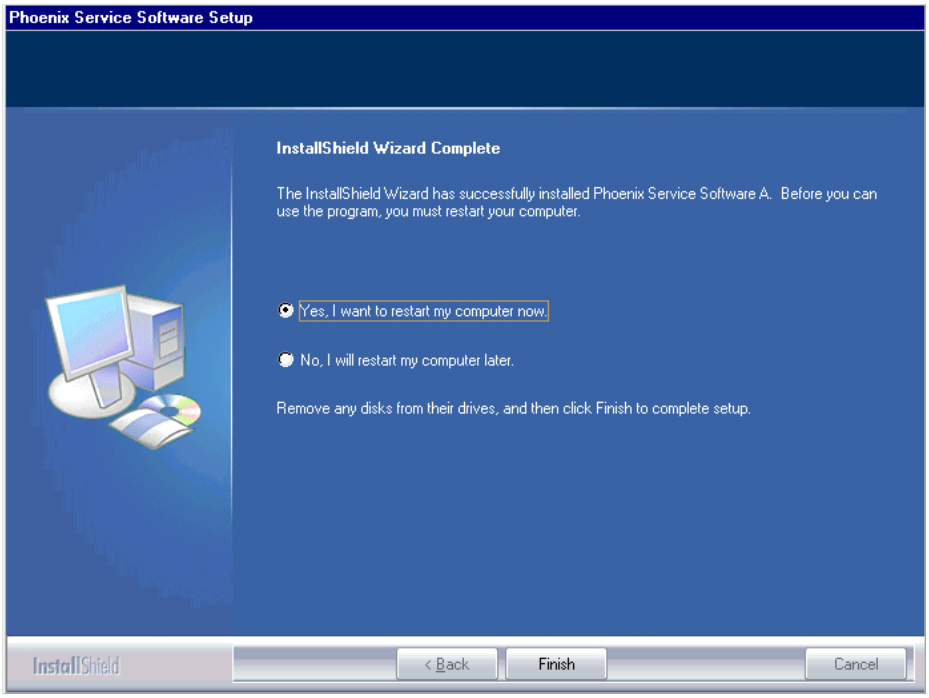
Click "Finish" to finalize. Phoenix is ready for use.


Phoenix Service Software Setup
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Phoenix Service Software A. Click Finish to exit the wizard.
Add Phoenix icon to Desktop.
InstallShield
< Back
Finish
Cancel

If the operating system used requires restarting your computer (Windows 98, SE, ME) the Install Shield Wizard will tell you about it. Select "Yes..." to reboot the PC immediately and "No..." to reboot the PC manually afterwards.


Phoenix Service Software Setup
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Phoenix Service Software A. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
InstallShield
< Back
Finish
Cancel

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After the reboot, components are registered and Phoenix is ready for use. Note that Phoenix doesn't work, if components are not registered.

Now the installation of Phoenix Service SW is ready and it can be used after

- installing the phone model specific Phone Data Package for Phoenix
- configuring users and connections

FLS-4S can be used right away.

FPS-8* can be used after updating Flash Update Package files to it.

Update Installation of Phoenix

If you already have the Phoenix Service SW installed on your computer, sooner or later there will be need to update it when new versions are released.

Always use the latest available versions of both the Phoenix Service SW and the Phone Specific Data Package . Instructions can be found in phone model specific Technical Bulletins and Phone Datapackage readme.txt files (shown during installation).

To update the Phoenix, you need to take exactly the same steps as when installing it for the first time.

- Download the installation package to your computer hard disk.
- Close all other programs.
- Run the application file (e.g. ***phoenix_service_sw_a12_2003_50_6_35.exe***).

Newer version of Phoenix will be installed.

Driver versions will be checked and if need be, updated.

When you update the Phoenix from an old to a new version (e.g. ***a11_2003_41_5_28*** to ***a12_2003_50_6_35***), the update will take place automatically without uninstallation

If you try to update the Phoenix with the same version that you already have (e.g. ***a12_2003_50_6_35*** to ***a12_2003_50_6_35***) you are asked if you want to uninstall the version of Phoenix you have on your PC. In this case, you can choose between total uninstallation and repair just like when you choose to uninstall Phoenix service software from the Windows control panel.

If you try to install an older version (e.g. downgrade from ***a12_2003_50_6_35*** to ***a11_2003_41_5_28*** installation will be interrupted.

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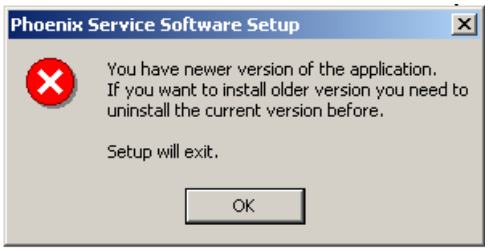
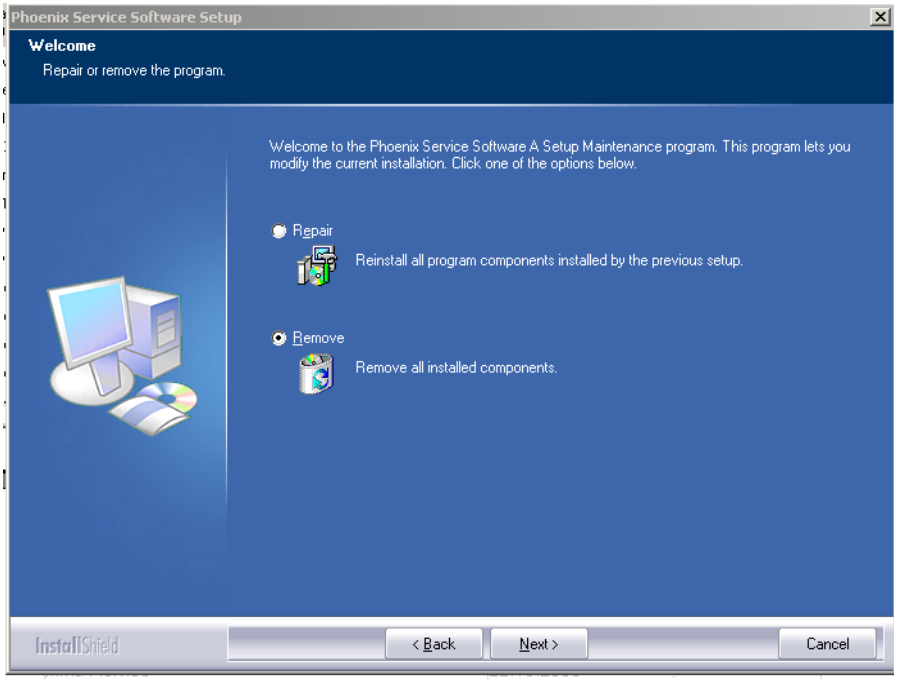

Phoenix Service Software Setup
You have newer version of the application.
If you want to install older version you need to uninstall the current version before.
Setup will exit.
OK

Please always follow the instructions on the screen.

How to Uninstall Phoenix

Uninstallation can be done manually from Windows Control Panel - Add / Remove Programs.

Choose “Phoenix Service Software” and click "Add/Remove". Choose “Remove” to uninstall Phoenix.


Phoenix Service Software Setup
Welcome
Repair or remove the program.
Welcome to the Phoenix Service Software A Setup Maintenance program. This program lets you modify the current installation. Click one of the options below.
Repair
Reinstall all program components installed by the previous setup.
Remove
Remove all installed components.
InstallShield
< Back
Next >
Cancel

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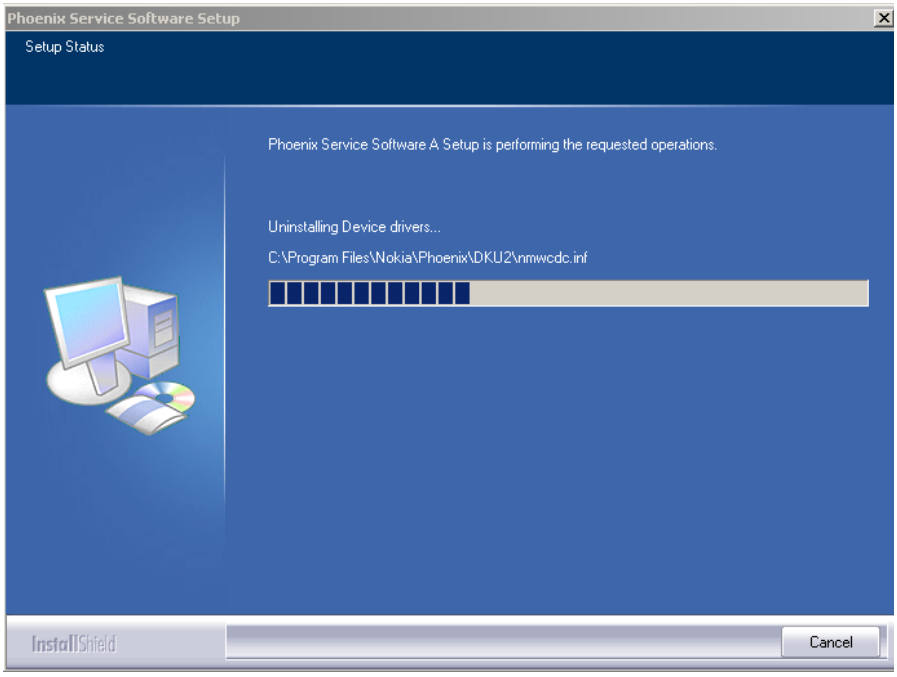
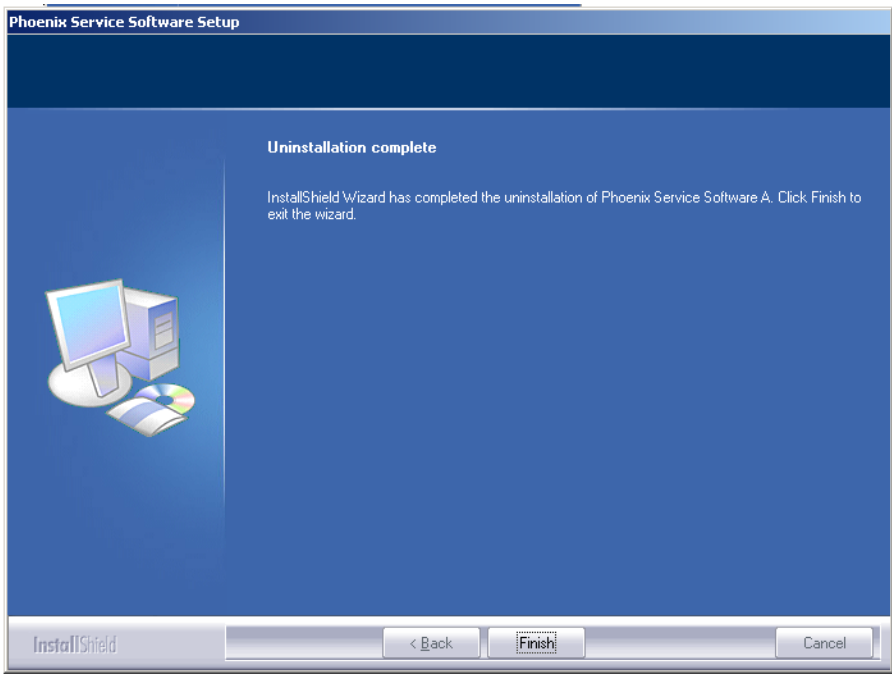
Progress of the uninstallation is shown.



If the operating system does not require rebooting, select “Finish” to complete.


Phoenix Service Software Setup
Uninstallation complete
InstallShield Wizard has completed the uninstallation of Phoenix Service Software A. Click Finish to exit the wizard.
InstallShield
< Back
Finish
Cancel

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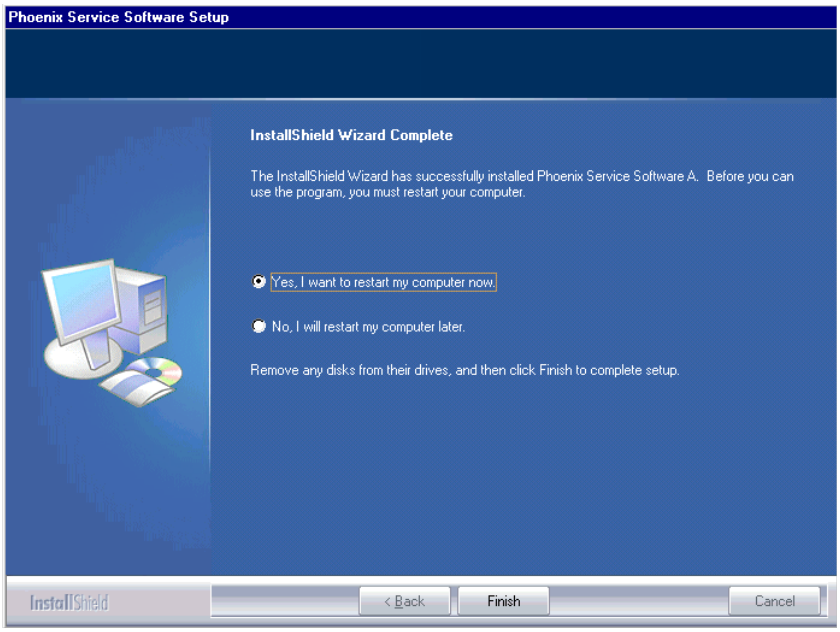
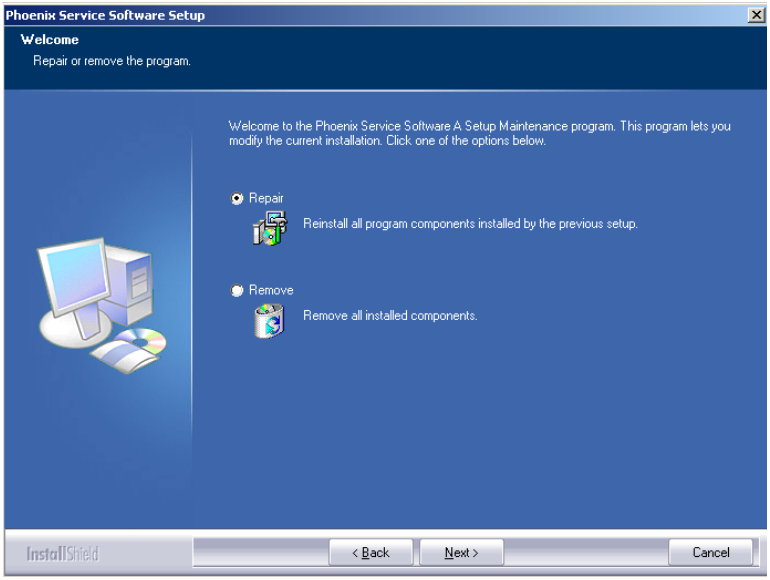
If the operating system used requires rebooting, Install Shield Wizard will tell you about it. Select "Yes..." to reboot the PC immediately and "No..." to reboot the PC manually afterwards.


Phoenix Service Software Setup
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Phoenix Service Software A. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
InstallShield
< Back
Finish
Cancel

Repair

If you experience any problems with the service software or suspect that files have been lost, you can use the repair function before completely reinstalling Phoenix. Note that the original installation package (e.g. ***phoenix_service_sw_a12_2003_50_6_35.exe***) must be found on your PC when you run the repair setup.

Run Windows Control Panel - Add / Remove Programs, choose “Phoenix Service Software” and click "Add/Remove". In the following view choose “Repair”.


Phoenix Service Software Setup
Welcome
Repair or remove the program.
Welcome to the Phoenix Service Software A Setup Maintenance program. This program lets you modify the current installation. Click one of the options below.
Repair
Reinstall all program components installed by the previous setup.
Remove
Remove all installed components.
InstallShield
< Back
Next >
Cancel

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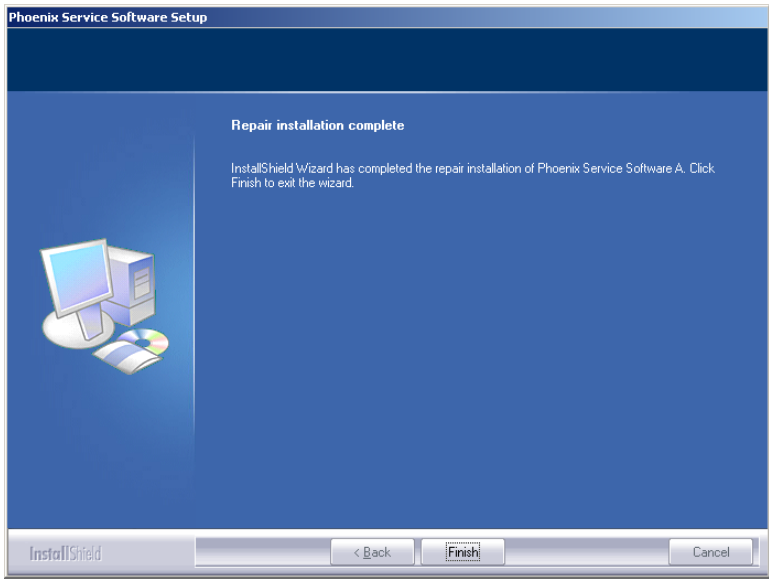
Phoenix will reinstall components and register them. The procedure is the same as in the update installation.

Choose “Finish” to complete.


Phoenix Service Software Setup
Repair installation complete
InstallShield Wizard has completed the repair installation of Phoenix Service Software A. Click Finish to exit the wizard.
InstallShield
< Back
Finish
Cancel

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Data Package for Phoenix (Product Specific)

Before installation

Product Data Package contains all product specific data to make the Phoenix Service Software and tools usable with a certain phone model.

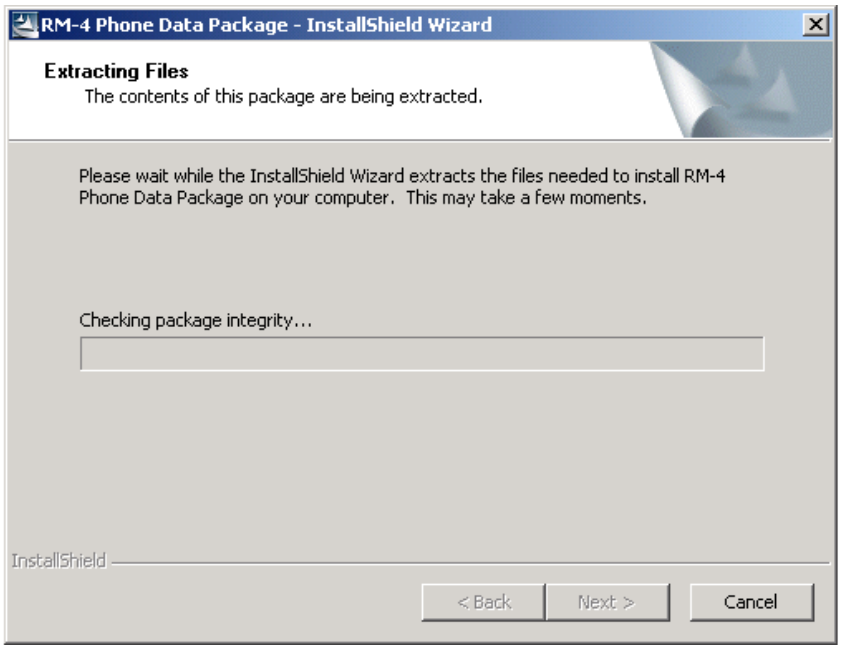
- Check that the Dongle is attached to the parallel port of your computer.
- Install Phoenix Service SW.
- Download the installation package (e.g. ***RM-4_dp_v_8_00_MCUSW3_42.exe***) to your computer (e.g. C:\TEMP).
- Close all other programs.
- Run the application file (e.g. ***RM-4_dp_v_8_00_MCUSW3_42.exe***) and follow instructions on the screen.

Please note that very often the Phoenix Service SW and the Phone Specific Data Package for Phoenix come in pairs, meaning that certain version of Phoenix can only be used with certain version of Data Package. Always use the latest available versions of both. Instructions can be found in phone model specific Technical Bulletins and readme.txt files of the data packages.

Installation of Phoenix Data Package (Product Specific)

Run the ***RM-4_dp_v_8_00_MCUSW3_42.exe*** to start installation.

When you choose “Next” the files needed for installation will be extracted. Please wait.


RM-4 Phone Data Package - InstallShield Wizard
Extracting Files
The contents of this package are being extracted.
Please wait while the InstallShield Wizard extracts the files needed to install RM-4 Phone Data Package on your computer. This may take a few moments.
Checking package integrity...
InstallShield
< Back
Next >
Cancel

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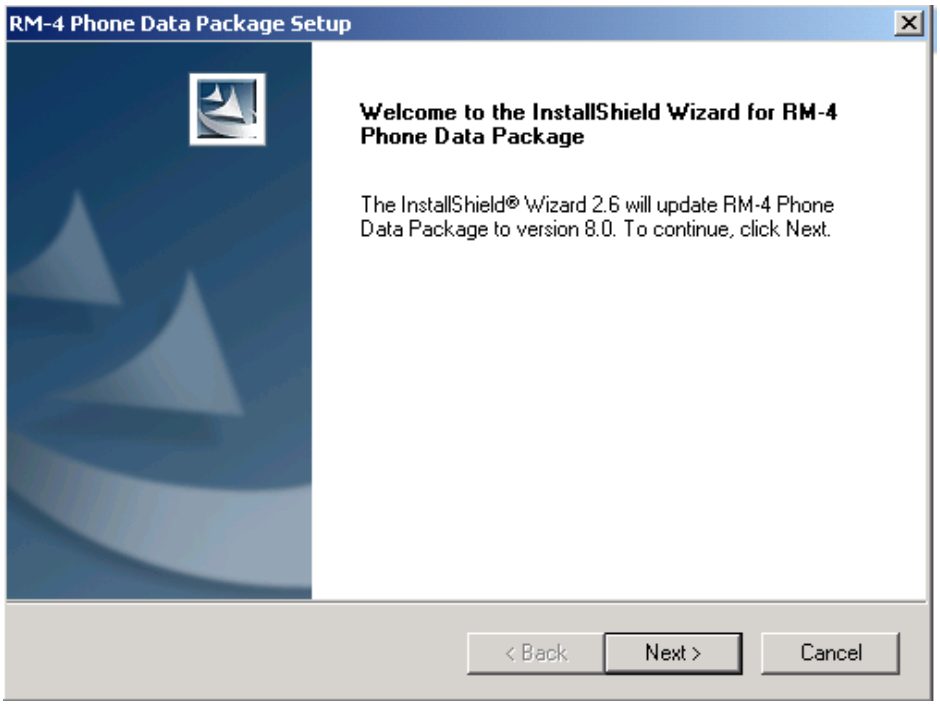
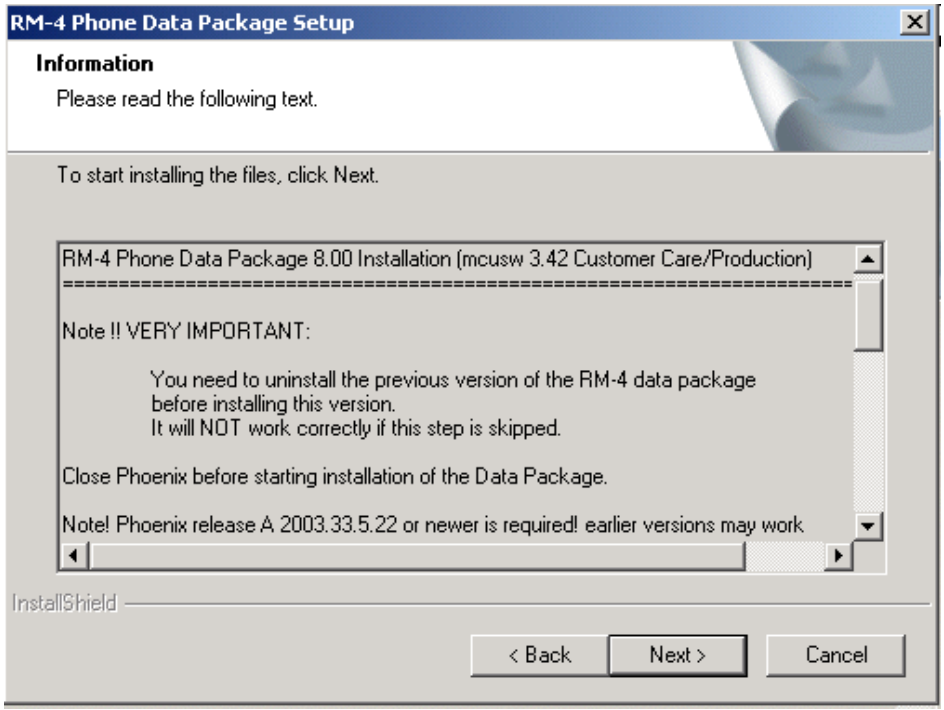
Choose “Next” to continue.


RM-4 Phone Data Package Setup
Welcome to the InstallShield Wizard for RM-4 Phone Data Package
The InstallShield® Wizard 2.6 will update RM-4 Phone Data Package to version 8.0. To continue, click Next.
< Back
Next >
Cancel

In this view you can see the contents of the Data Package. **Read the text carefully**. There should be information about the Phoenix version needed with this data package. Choose “Next”.

.


RM-4 Phone Data Package Setup
Information
Please read the following text.
To start installing the files, click Next.
RM-4 Phone Data Package 8.00 Installation (mcusw 3.42 Customer Care/Production)
Note !! VERY IMPORTANT:
You need to uninstall the previous version of the RM-4 data package before installing this version.
It will NOT work correctly if this step is skipped.
Close Phoenix before starting installation of the Data Package.
Note! Phoenix release A 2003.33.5.22 or newer is required! earlier versions may work
InstallShield
< Back
Next >
Cancel

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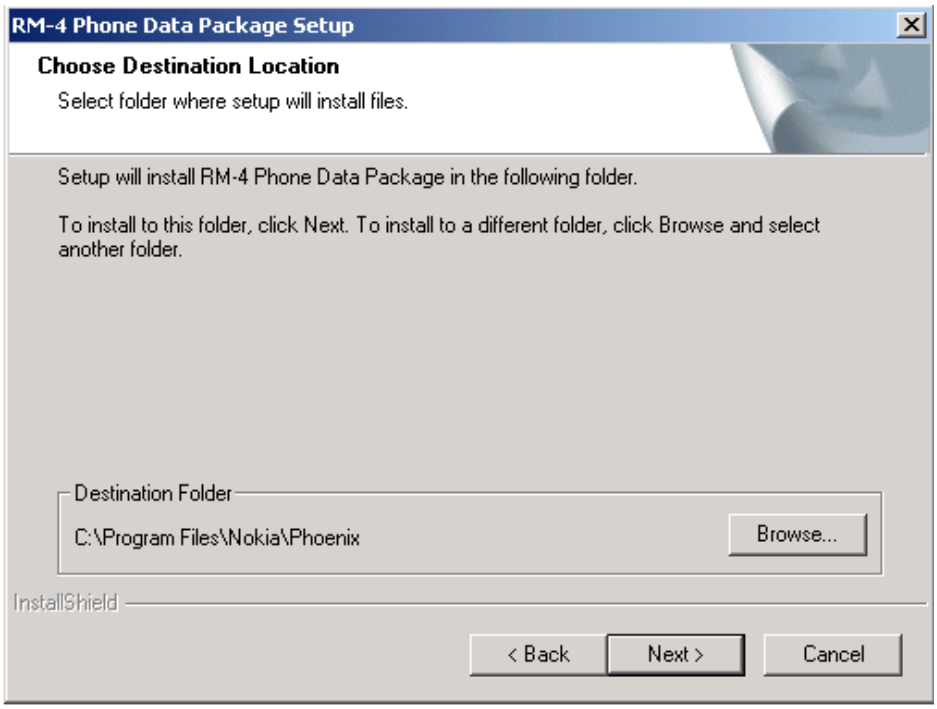
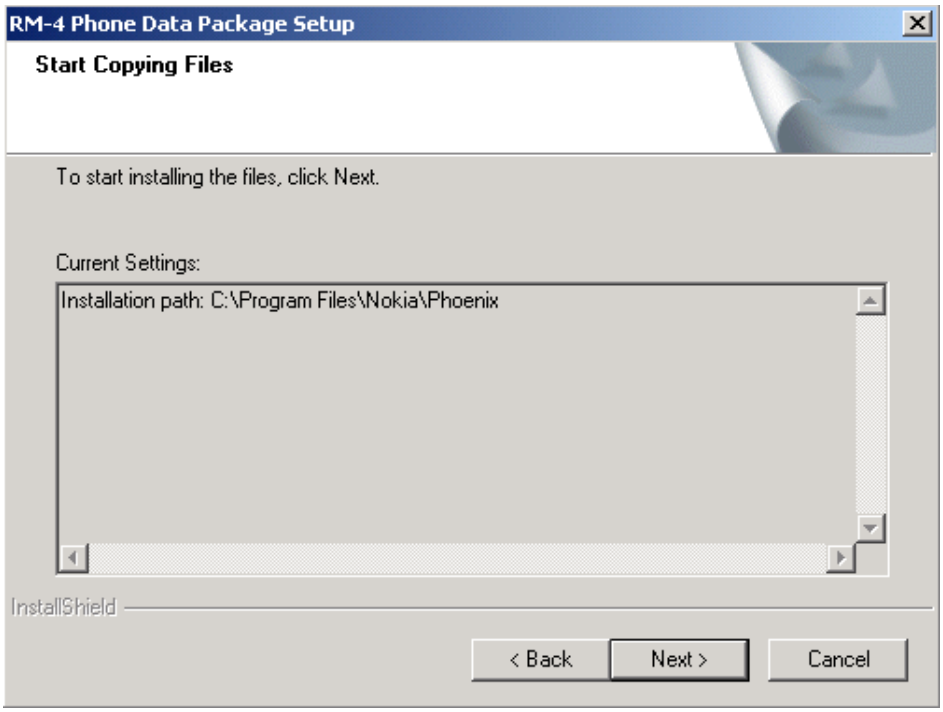
Confirm location and choose “Next” to continue. The install shield checks where the Phoenix application is installed and the directory is shown. Choose “Next” to continue.

.


RM-4 Phone Data Package Setup
Choose Destination Location
Select folder where setup will install files.
Setup will install RM-4 Phone Data Package in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\Nokia\Phoenix
Browse...
InstallShield
< Back
Next >
Cancel

Choose “Next” to start copying the files.



Phone model specific files will be installed. Please wait.

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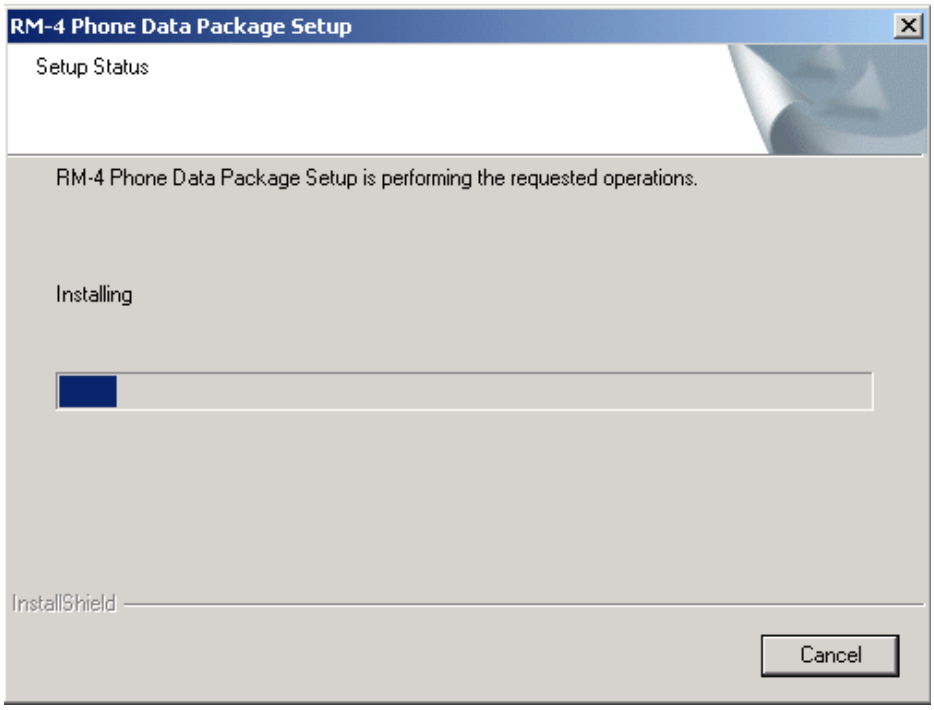
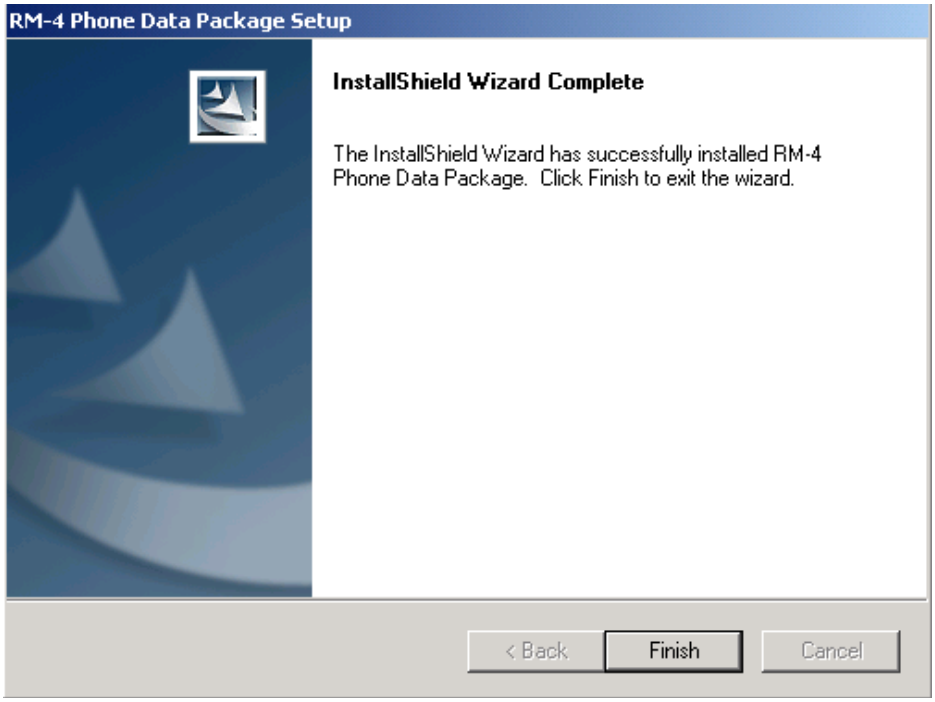


Choose “Finish” to complete the installation.


RM-4 Phone Data Package Setup
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed RM-4 Phone Data Package. Click Finish to exit the wizard.
< Back
Finish
Cancel

You now have all phone model specific files installed in your Phoenix Service SW.

Now Phoenix can be used to for example flash phones and print type labels after

- configuring users and
- managing connections.

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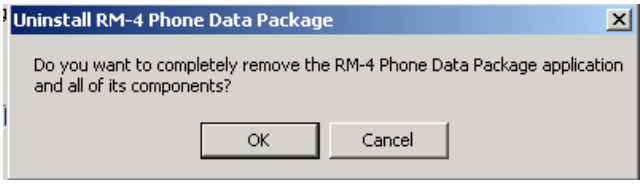
FLS-4S can be used right away.

FPS-8* can be used after updating Flash Update Package files to it.

How to Uninstall Data Package

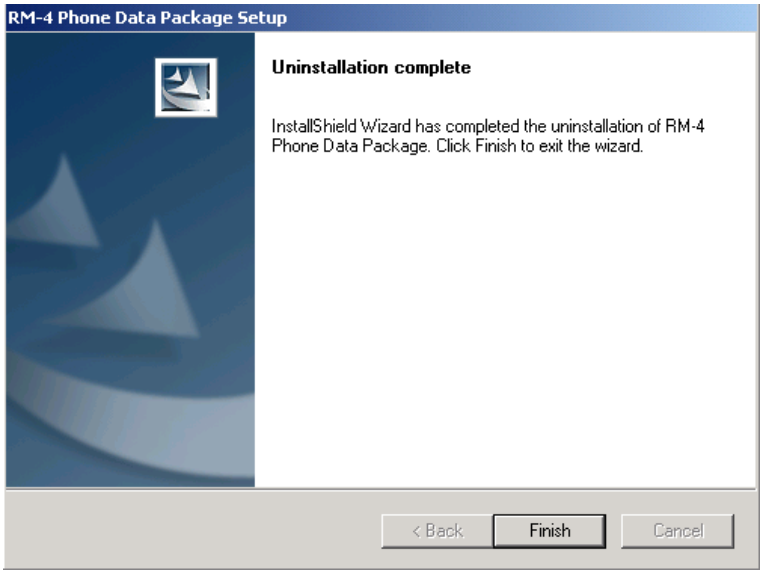
Uninstallation can also be done manually from Windows Control Panel / Add / Remove Programs/“RM-4 Phone Data Package”.

If you try to install the same version of Phoenix Data Package that you already have, you are asked if you want to uninstall the version you have on your PC. Answer “OK” to uninstall, “Cancel” if you don’t want to uninstall.


Uninstall RM-4 Phone Data Package
Do you want to completely remove the RM-4 Phone Data Package application and all of its components?
OK
Cancel

Older versions of data packages don’t need to be uninstalled unless instructions to do so are given in the readme.txt of the data package and bulletins concerning the release. Please read all related documents carefully.

Once the previously installed Data package is uninstalled, choose “Finish”.


RM-4 Phone Data Package Setup
Uninstallation complete
InstallShield Wizard has completed the uninstallation of RM-4 Phone Data Package. Click Finish to exit the wizard.
< Back
Finish
Cancel

Run the ***RM-4_dp_v_8_00_MCUSW3_42.exe*** again in case you want to continue the installation from the beginning.

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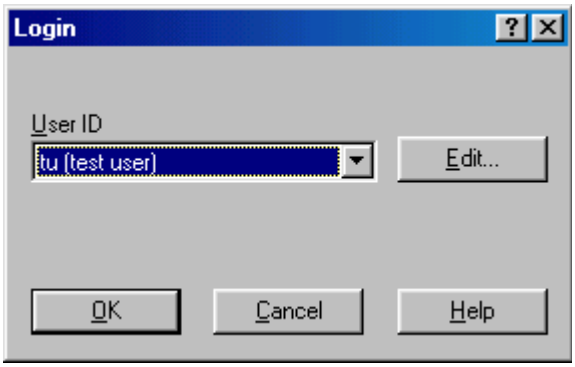
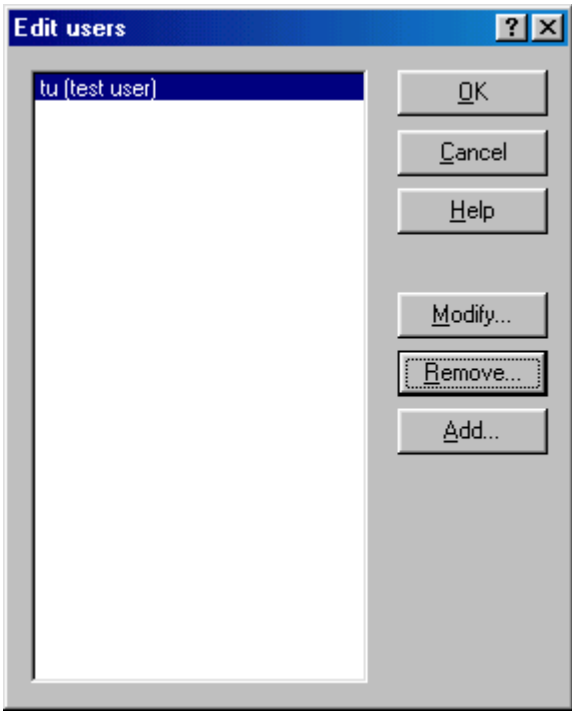
How to Configure Users

Start Phoenix Service SW and Login. To add new user choose “Edit”. If user ID is already configured, choose your own user ID from the list and choose “OK”



Choose “Add” to continue.



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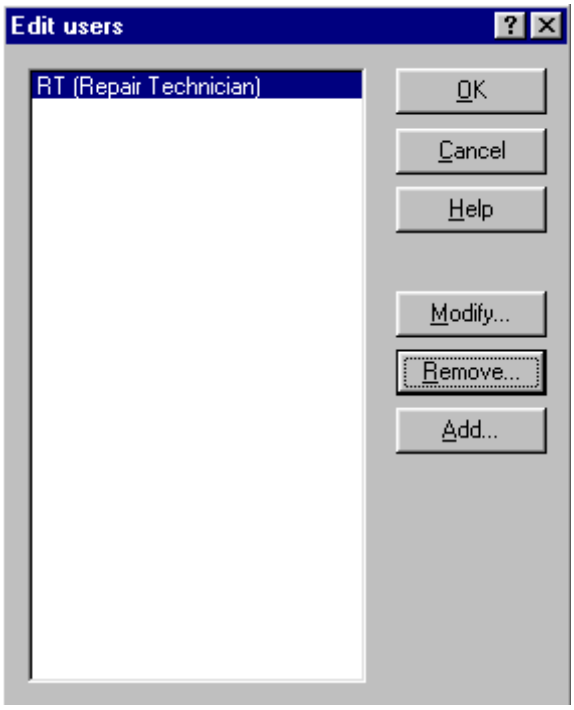
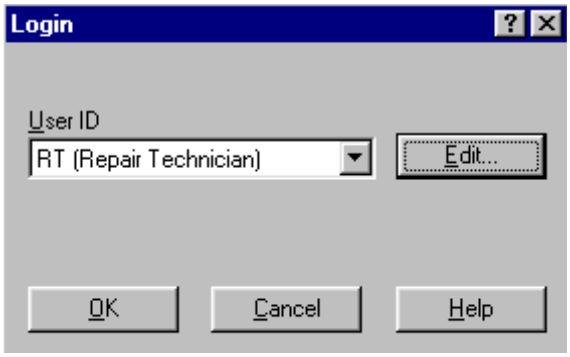
Type in your name and initials and choose “OK”.

User has now been created, choose “OK”.



You are now able to login with this username, choose “OK”.



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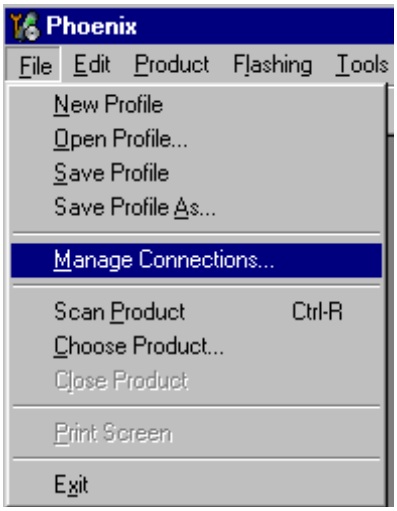
How to Manage Connections

Start Phoenix Service SW and Login.

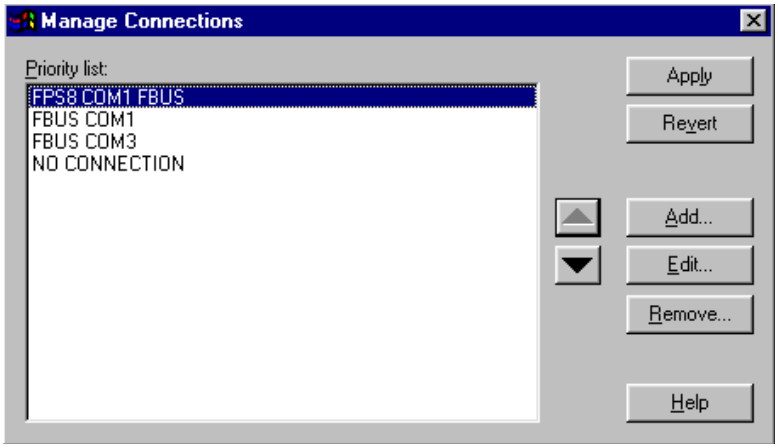
Choose “Manage Connections” from the “File” Menu.



Existing connections can be selected, edited, deleted and new ones created by using this dialog.

A connection can be created either manually or by using a Connection Wizard.

To add new connection, choose “Add” and select if you want to create it manually or by using the Wizard.



Choose “Next” to continue.

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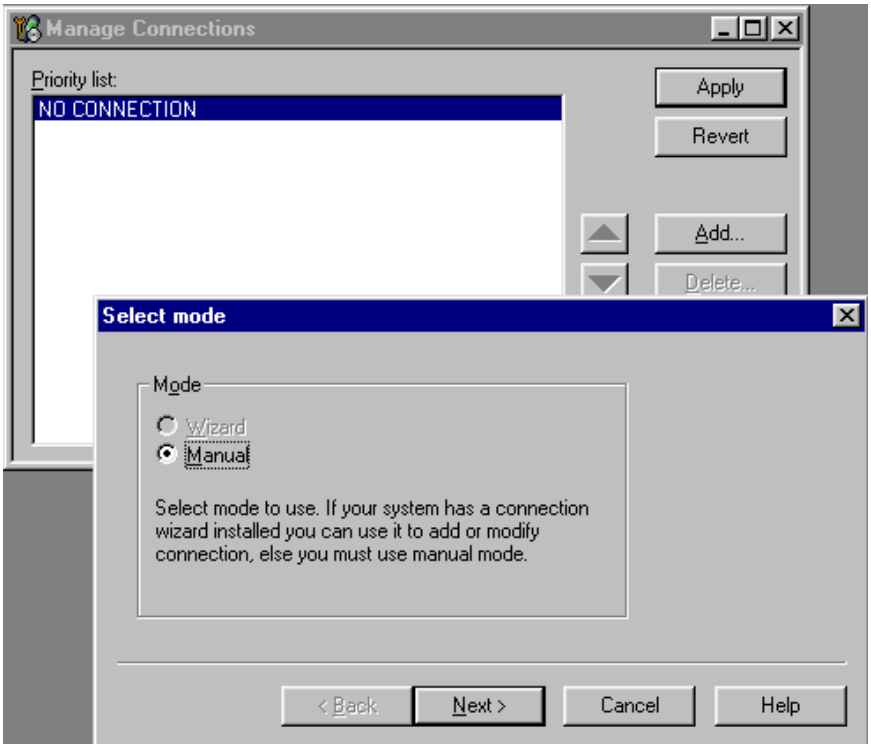
In the next dialogs you will be asked to select some settings for the connection..



Manual Settings

A) For **FLS-4S POS Flash Device**, choose the following connection settings:

- **Media:** FBUS
- **COM Port:** Virtual COM Port used by FLS-4 **Please check this always!**

(To check, please go to Windows / Control Panel / FLS Virtual Port / Configuration)

B) For **FPS-8 Flash Prommer**, choose the following connection settings:

- **Media:** FPS-8
- **Port Num:** COM Port where FPS-8 is connected
- **COMBOX_DEF_MEDIA:** FBUS

Choose “Finish” to complete.

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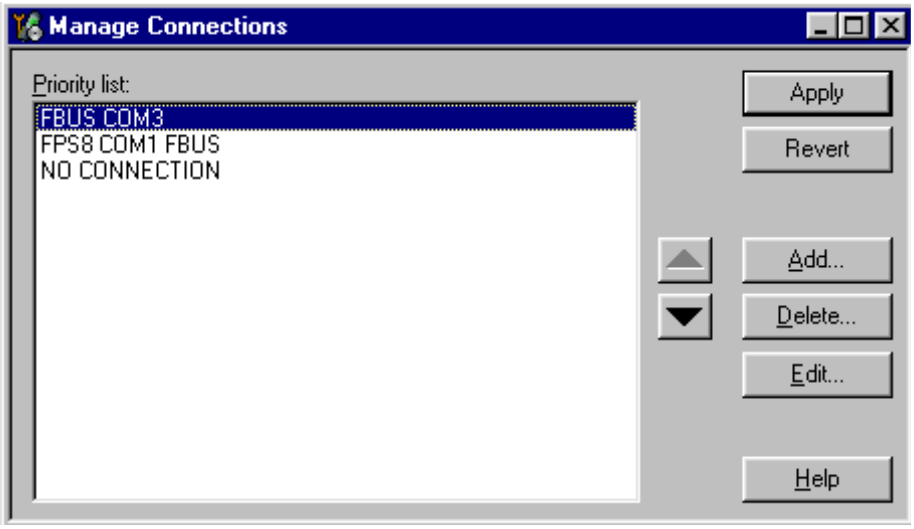
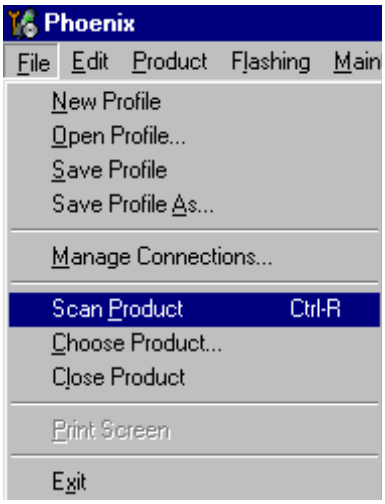
If you use the Wizard, connect the tools and a phone to your PC and the wizard will automatically try to configure the correct connection.

Activate the connection you want to use by clicking it and use up/down arrows to move it on top of the list. Choose “Apply”. The connection is now selected and can be used after closing the “Manage Connections” window.



The selected connection will be shown on the right hand bottom corner of the screen.

To use the selected connection, connect the phone to Phoenix with correct service tools. Make sure that it is switched on and select “Scan Product”.



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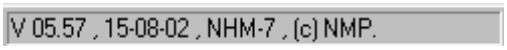
When the product is found, Phoenix will load product support and when everything is ready, the name of the loaded product support module and its version will be shown on the bottom of the screen.



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How to Update Flash Support Files for FPS-8* and FLS-4*

Before Installation

- Install Phoenix Service SW .
- Install phone model Specific Datapackage for Phoenix.

The flash support files are delivered in the same installation package with Phoenix data packages or newer Phoenix packages beginning from September 2003.

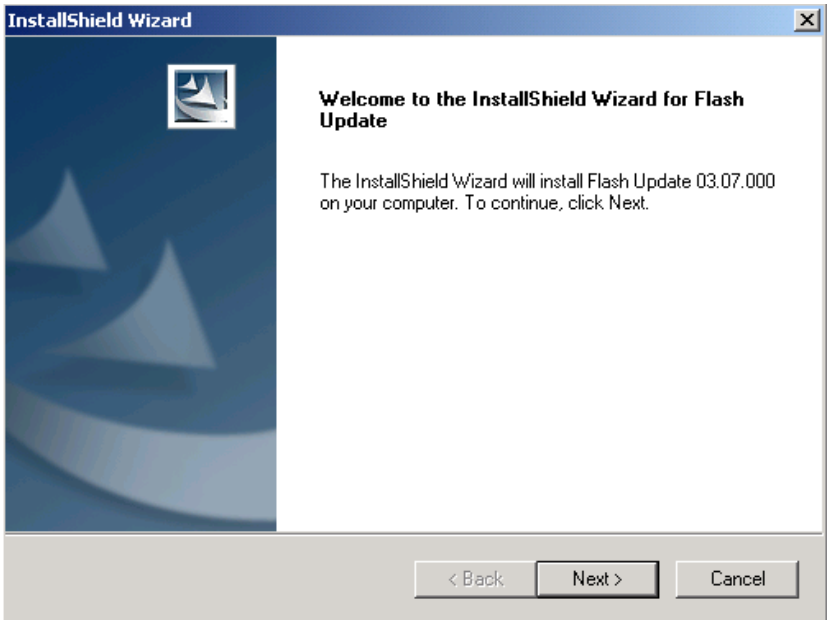
Normally, it is enough to install the Phoenix and phone data package only because the Phoenix installation always includes the latest flash update package files for FLS-4S / FPS-8*.

Separate installation package for flash support files is available, and the files can be updated according to these instructions if updates appear between Phoenix / data package releases.

Installing the Flash Support Files (Only Separate Installation package)

If you are not using separate installation package, you can skip this section and continue from the following section after installing a new Phone Data package.

Start by double clicking ***flash_update_03_07_000.exe***. The installation begins.


InstallShield Wizard
Welcome to the InstallShield Wizard for Flash Update
The InstallShield Wizard will install Flash Update 03.07.000 on your computer. To continue, click Next.
< Back
Next >
Cancel

If the same version of Flash Update package already exists, and you want to reinstall them, the previous package is first uninstalled. Restart installation after that.

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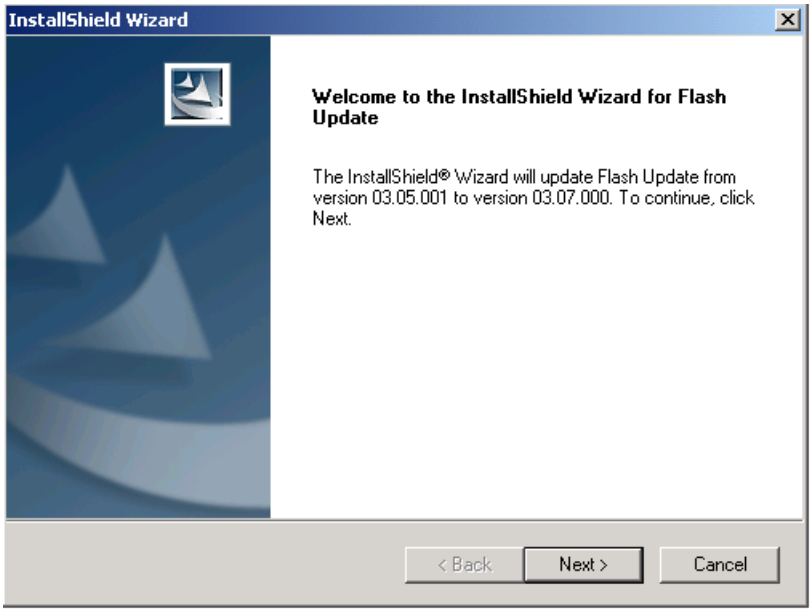
Uninstall Flash Update
Do you want to completely remove the Flash Update 03.07.000 application and all of its components?
OK
Cancel

If you try to downgrade the existing version to older ones, the setup will be aborted. If you really want to downgrade, uninstall newer files manually from Control Panel and then rerun the installation.

You have newer version of the application.
If you want to install older version you need to uninstall the current version before.
Setup will exit.
OK

If an older version exists on your PC and it needs to be updated, Choose “Next” to continue installation.


InstallShield Wizard
Welcome to the InstallShield Wizard for Flash Update
The InstallShield® Wizard will update Flash Update from version 03.05.001 to version 03.07.000. To continue, click Next.
< Back
Next >
Cancel

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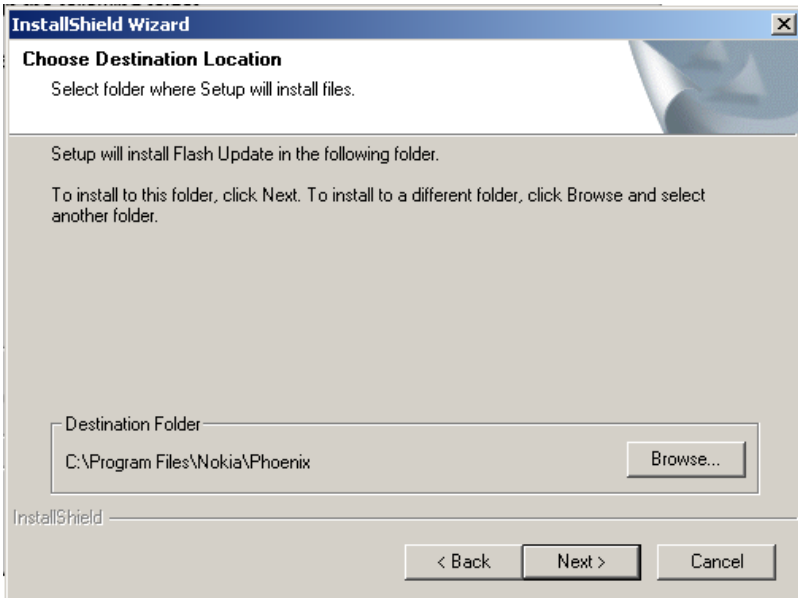
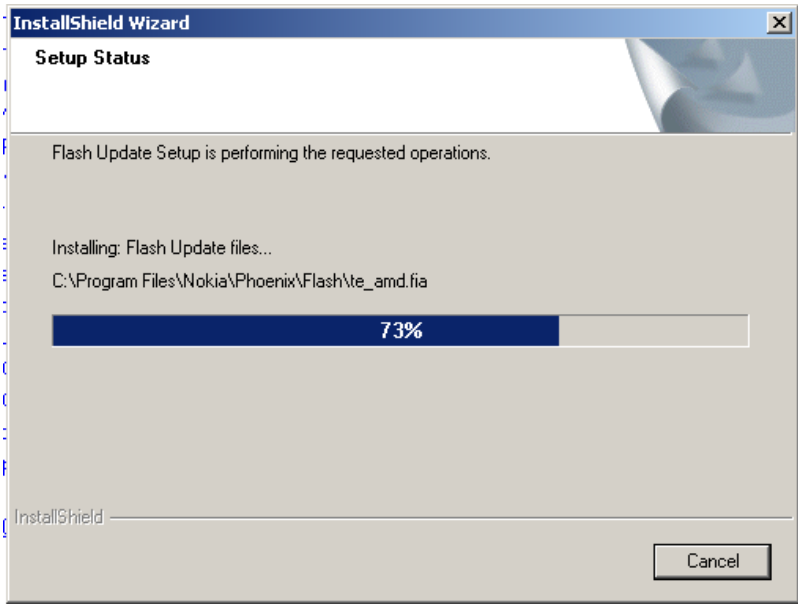
It is **highly** recommended to install the files to the default destination folder ***C:\Program Files\Nokia\Phoenix***. Choose “Next” to continue. When installing the flash update files for the first time you may choose another location by selecting “Browse” (not recommended)..


InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install Flash Update in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\Nokia\Phoenix
Browse...
InstallShield
< Back
Next >
Cancel

Installation continues.



Choose “Finish” to complete the procedure.

FLS-4 can be used right after the Flash Update Package is installed.

FPS-8* flash prommer must be updated by using Phoenix!

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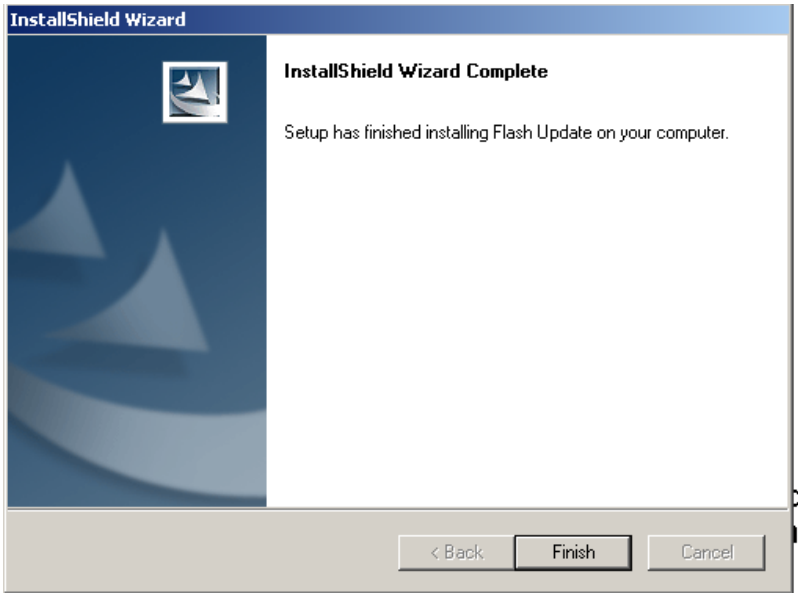
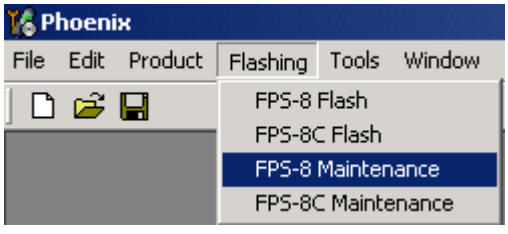


How to Update The FPS-8* Flash Prommer SW

Start Phoenix Service Software and login, manage the connection correctly for the FPS-8* flash prommer

Select ”FPS-8 maintenance” from the ”Flashing” menu.



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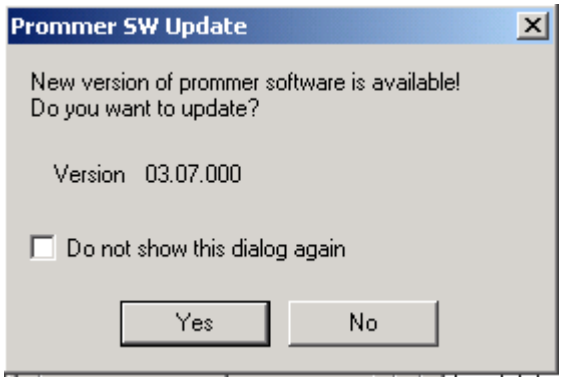
When a new FPS-8 flash update package is installed, you will be asked to update the files to your FPS-8 Prommer. Select ”Yes” to update files.



The Update procedure takes a couple of minutes, please wait until you are notified that the update has been successful. Choose “OK” and close “FPS8 Maintenance” UI.

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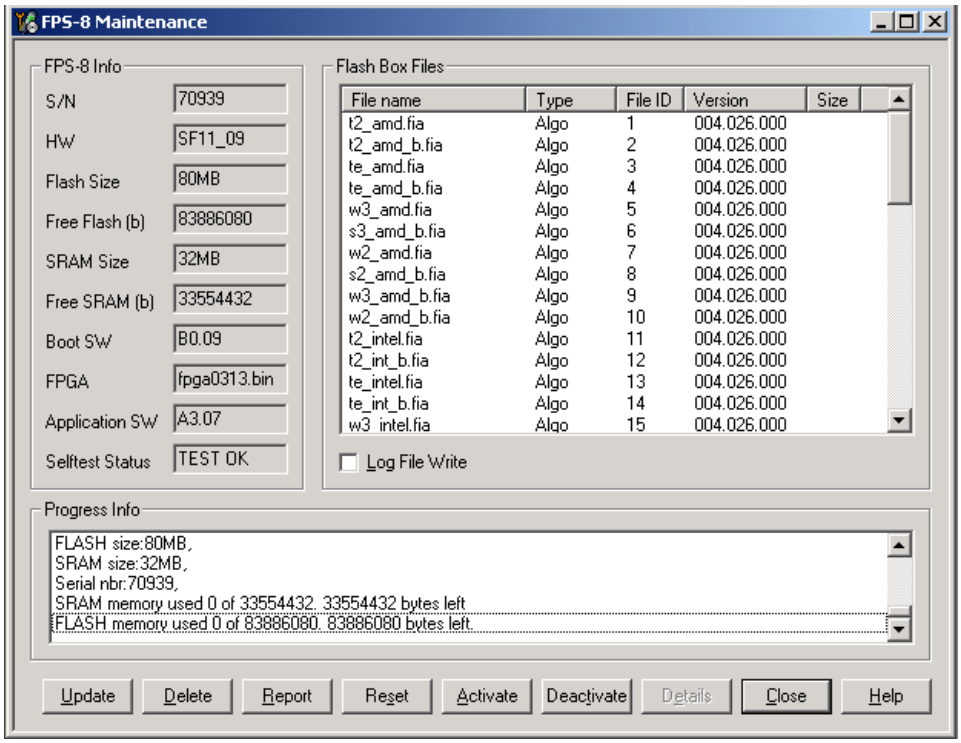
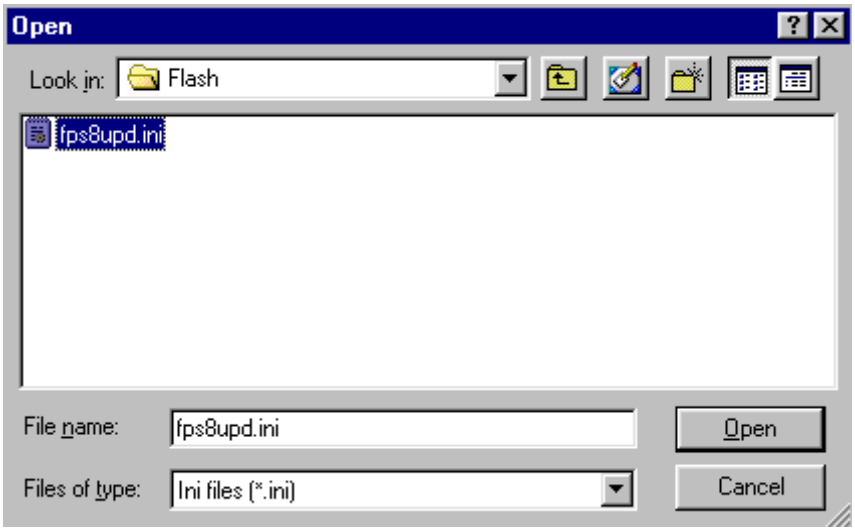
The view after successful prommer software update:



FPS-8 sw can also be updated by pressing the ”Update” button and selecting the appropriate **fps8upd.ini** file under ***C:\Program Files\Nokia\Phoenix*\Flash**.



All files can be loaded separately to FPS-8. To do this, just press the right mouse button in the ”Flash box files” window and select the file type to be loaded.

More information and help can be found from the “Help” dialog.

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FPS-8 Activation and Deactivation

- Before the FPS-8 can be successfully used for phone programming, it must be first activated.
- If there is a need to send the FPS-8 box to somewhere e.g. for repair, the box must be first deactivated.

Activation

Before FPS-8 can be successfully used for phone programming, it must be first activated.

Fill in first “FPS-8 activation request” sheet, in the FPS-8 sales package and follow the instructions on the sheet.

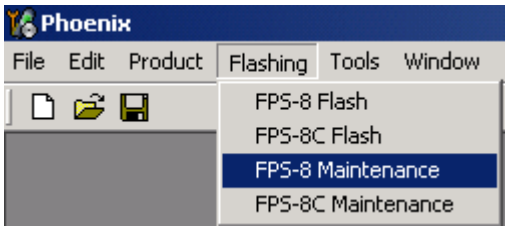
When activation file is received (e.g. 00000.in), copy it to the ***C:\ProgramFiles\Nokia\Phoenix\BoxActivation*** directory on your computer.

(This directory is created when Phoenix is installed).

Start Phoenix Service Software.

Select ”FPS-8 maintenance” from ”Flashing”.

.



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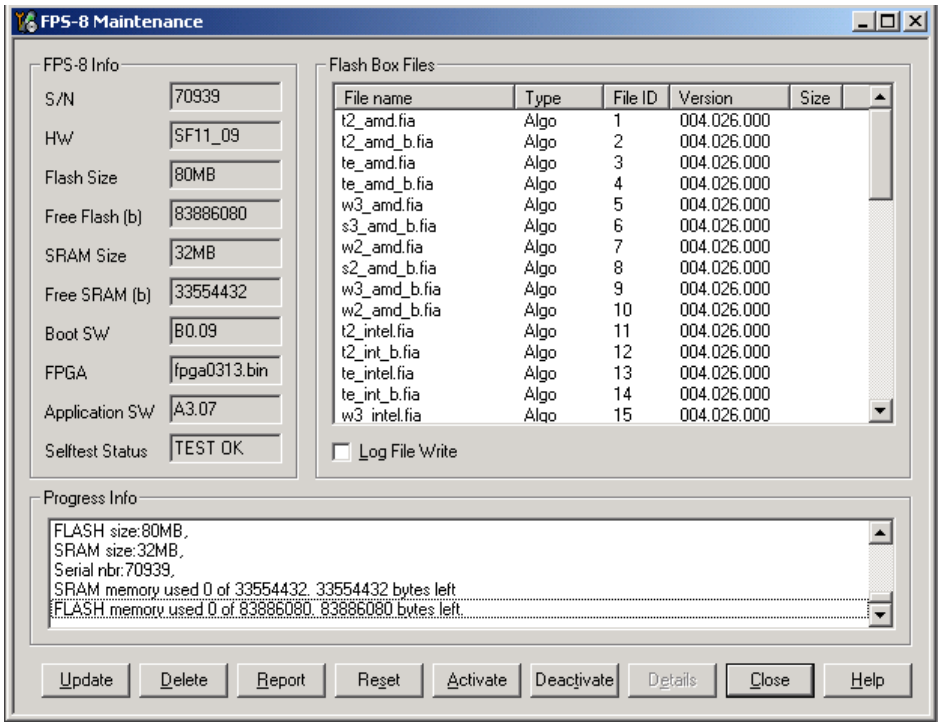
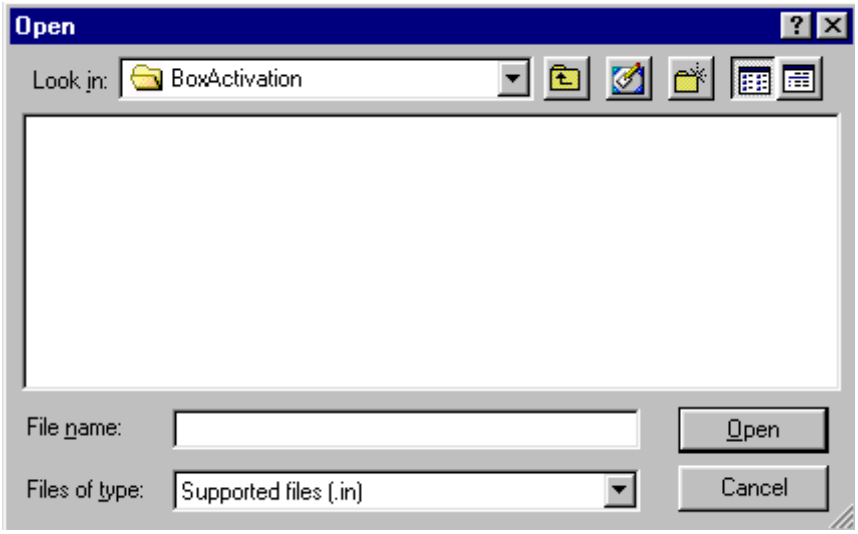
Select “Activate” from the “FPS8 Maintenance” – UI. The box will be activated when you choose “**Activate**”.



If you save the activation file you to some other directory on your PC, please browse to find it.

The box will be activated when you choose “**Open**”.



Turn the FPS-8 power off and on to complete the activation.

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Deactivation

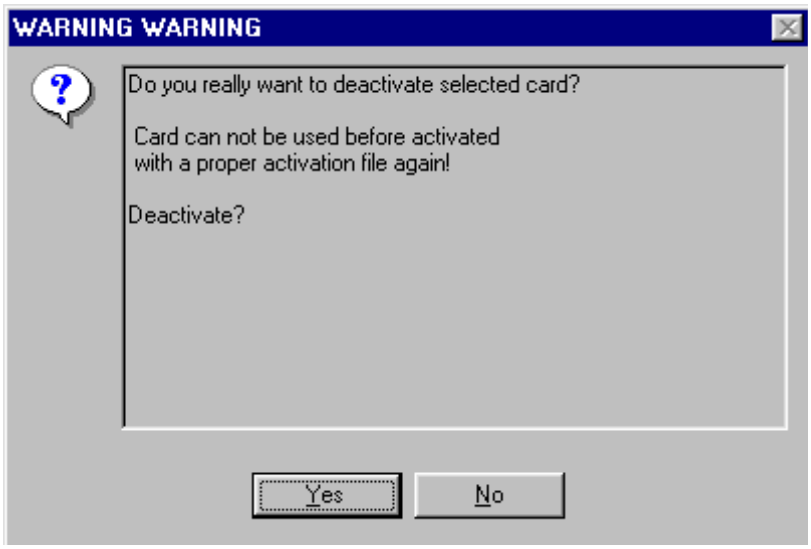
Start Phoenix Service Software.

Select ”FPS-8 maintenance” from the ”Flashing” menu as when activating prommer or updating sw.

Select “**Deactivate**” from the “FPS8 Maintenance” UI.

Confirm the deactivation by choosing “Yes”, the box will be deactivated.

.



Turn FPS-8 power off and on to complete the deactivation.

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JBV-1 Docking Station SW

The JBV-1 Docking Station is a common tool for all DCT-4 generation products.

In order to make the JBV-1 usable with different phone models, a phone specific Docking Station Adapter is used for different service functions.

The JBV-1 Docking Station contains Software (Firmware) which can be updated.

You need the following equipment to be able to update JBV-1 software:

- PC with USB connection
- Operating System supporting USB (Not Win 95 or NT)
- USB Cable (Can be purchased from shops or suppliers providing PC hardware and accessories)
- JBV-1 Docking Station
- External Power Supply 11-16V

Before Installation

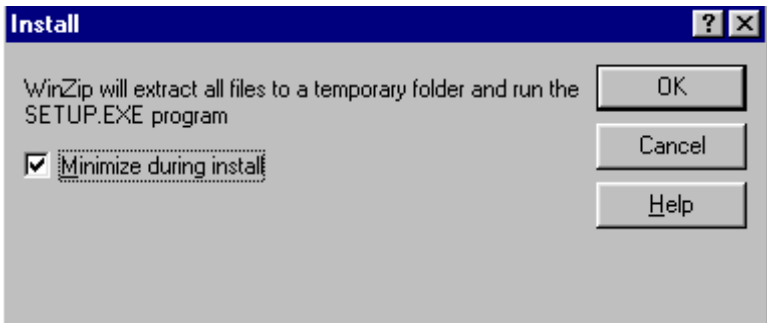
- Download the ***Jbv1_18_update.zip*** file to your computer (e.g. C:\TEMP) from your download web site.
- Close all other programs.
- Follow instructions on the screen.

Installing SW Needed for the JBV-1 SW Update

Note: DO NOT CONNECT THE USB CABLE / JBV-1 TO YOUR COMPUTER YET!

Run the Jbv1_18_update.zip file and start SW installation by double clicking Setup.exe.

Files needed for the JBV-1 Package setup program will be extracted.



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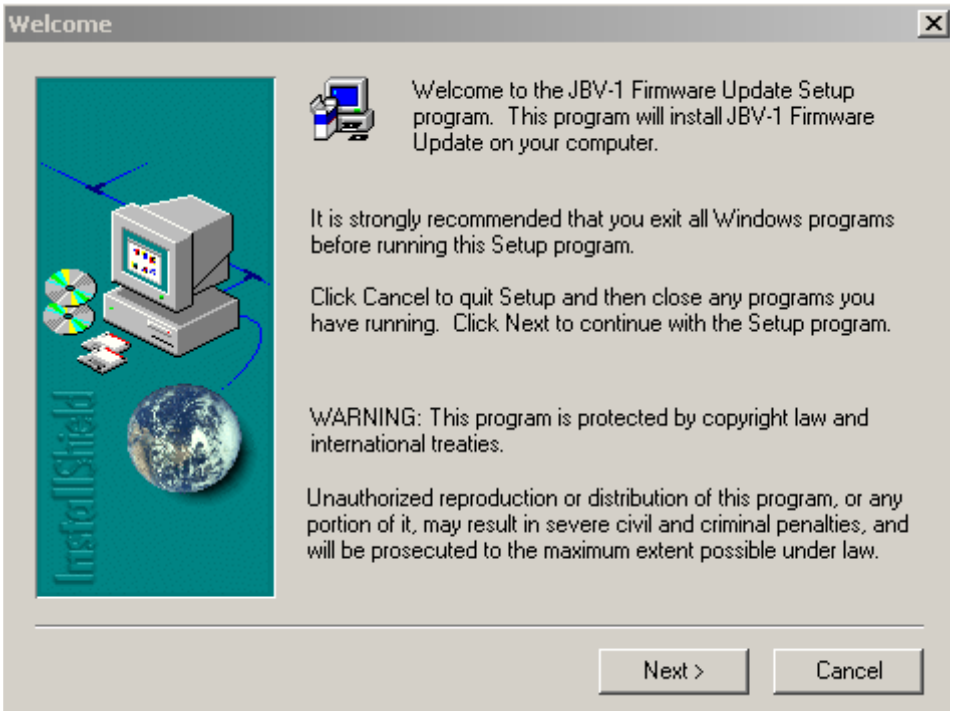
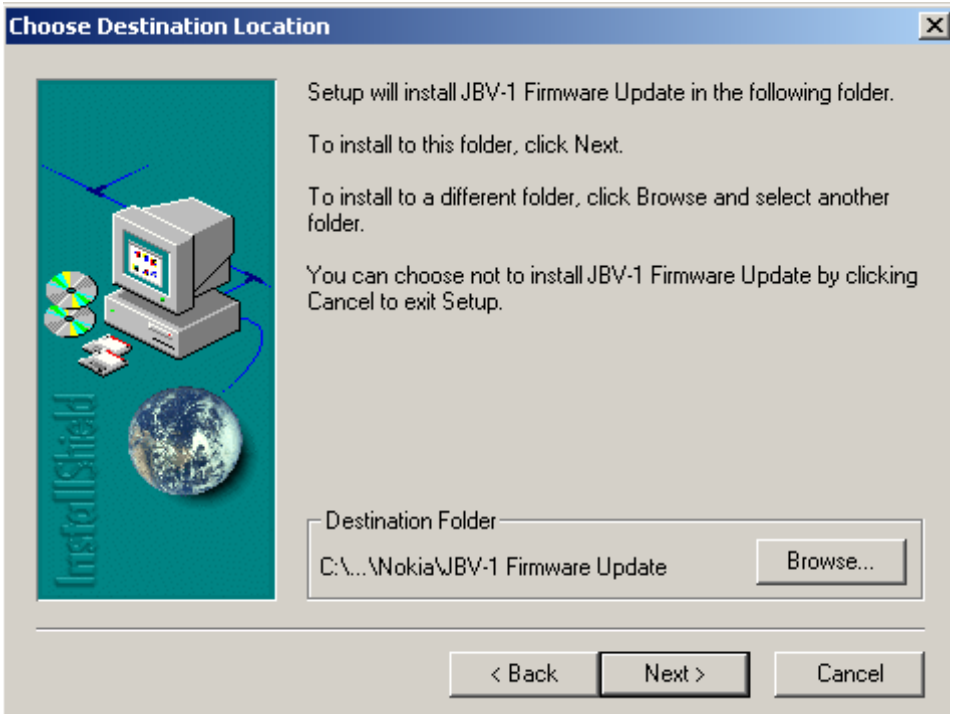
The installation begins, please read the information shown and Choose “Next” to continue.


Welcome
Welcome to the JBV-1 Firmware Update Setup program. This program will install JBV-1 Firmware Update on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
InstallShield
Next >
Cancel

Use the suggested destination folder for installing the JBV-1 SW Package and choose “Next” to continue.


Choose Destination Location
Setup will install JBV-1 Firmware Update in the following folder.
To install to this folder, click Next.
To install to a different folder, click Browse and select another folder.
You can choose not to install JBV-1 Firmware Update by clicking Cancel to exit Setup.
Destination Folder
C:\...\Nokia\JBV-1 Firmware Update
Browse...
InstallShield
< Back
Next >
Cancel

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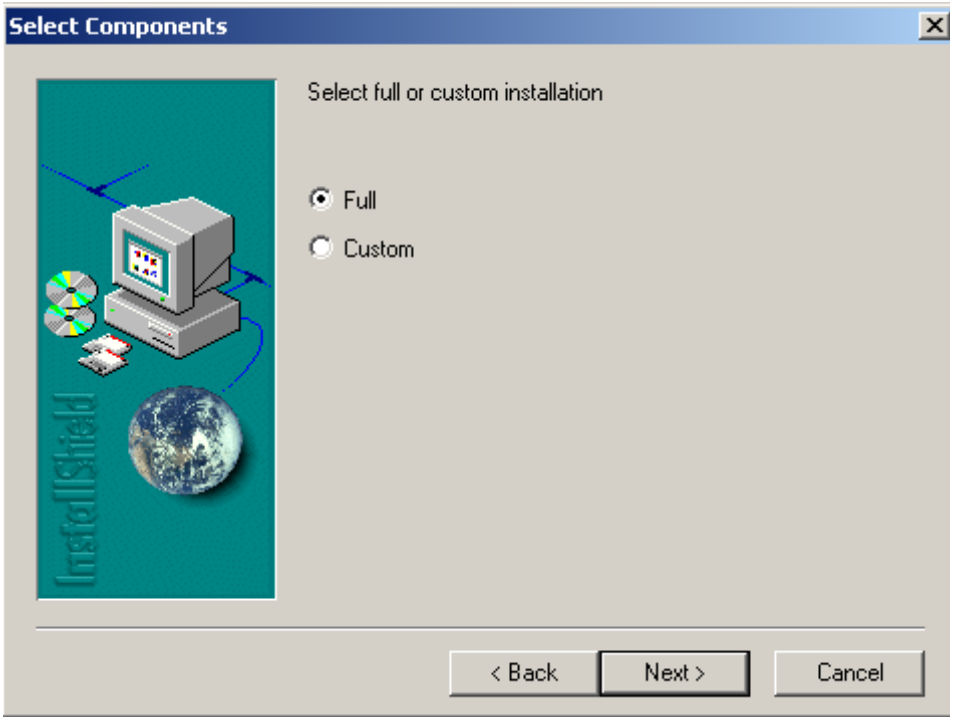
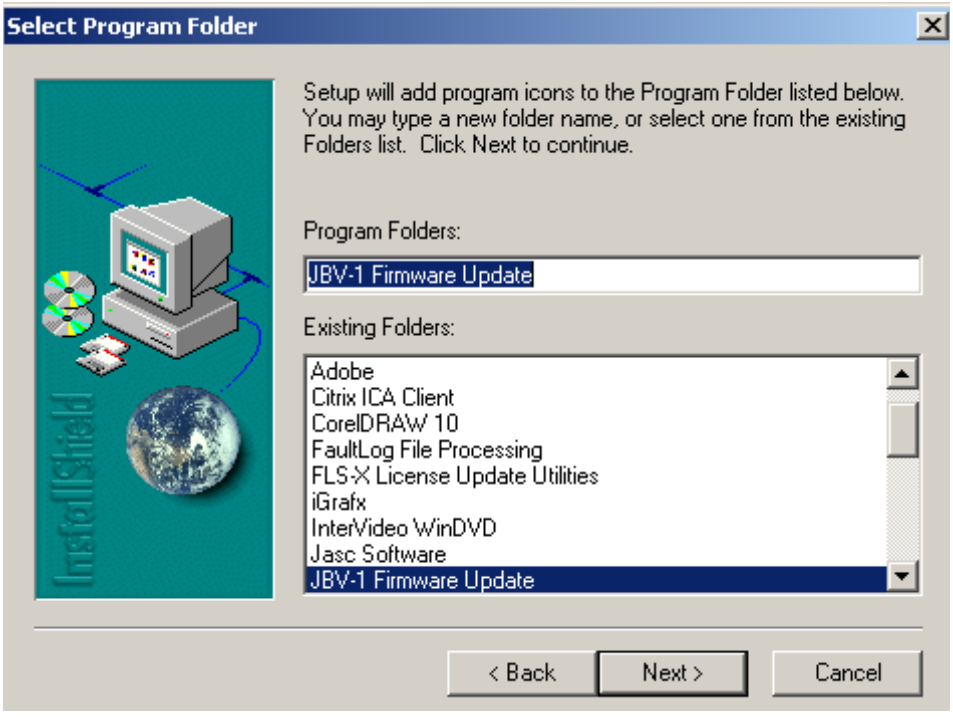
Select “Full” Installation and choose “Next” to continue.



A Program Folder will be created . Choose “Next” to continue, Software files will be installed.



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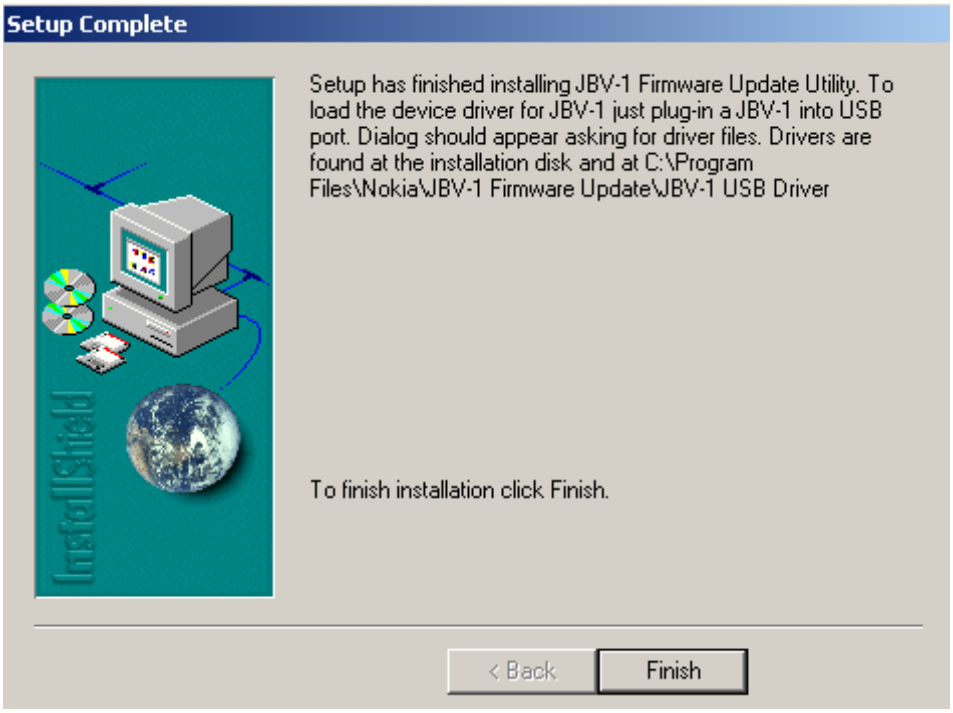
After a successful installation, choose “Finish” to complete.


Setup Complete
Setup has finished installing JBV-1 Firmware Update Utility. To load the device driver for JBV-1 just plug-in a JBV-1 into USB port. Dialog should appear asking for driver files. Drivers are found at the installation disk and at C:\Program Files\Nokia\JBV-1 Firmware Update\JBV-1 USB Driver
To finish installation click Finish.
InstallShield
< Back
Finish

YOU CAN NOW CONNECT THE USB CABLE / JBV-1 TO YOUR COMPUTER!

Connect power to JBV-1 (11-16V DC) from an external power supply, then connect the USB Cable between JBV-1 USB connector and PC.

The next step is to install or update the JBV-1 USB drivers which are delivered with the JBV-1 SW installation package. They can be found in folder:

C:\Program Files\Nokia\ JBV-1 Firmware Update\JBV-1USB driver

If there is no previously installed JBV-1 Firmware update package installed on your computer, Windows will detect the connected USB cable and drivers for the new HW. You will be prompted about this, please follow the instructions and allow Windows to search and install the best Drivers available.

If there is a previously installed JBV-1 Firmware update package (v 17 or older) on your computer, please update the JBV-1 USB Driver. Please see the readme.txt file under C:\Program Files\Nokia\ JBV-1 Firmware Update\JBV-1USB driver for instructions on how to update the JBV-1 USB Driver.

After you have installed or updated the JBV-1 USB driver, the actual JBV-1 SW update can begin.

Go to folder ***C:\Program Files\Nokia\JBV-1 Firmware Update\JBV-1 Firmware Update*** and start JBV-1 Update SW by double clicking **fwup.exe**.

JBV-1 Firmware update starts and shows the current status of the JBV-1 connected.

If the firmware version read from your JBV-1 is not the latest one available (v. 17 or older) , it needs to be updated to version 18 by choosing “Update Firmware”.

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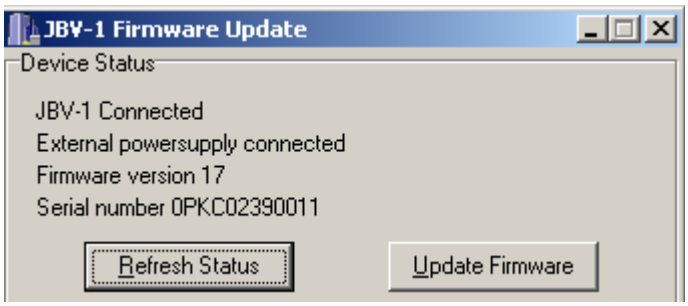
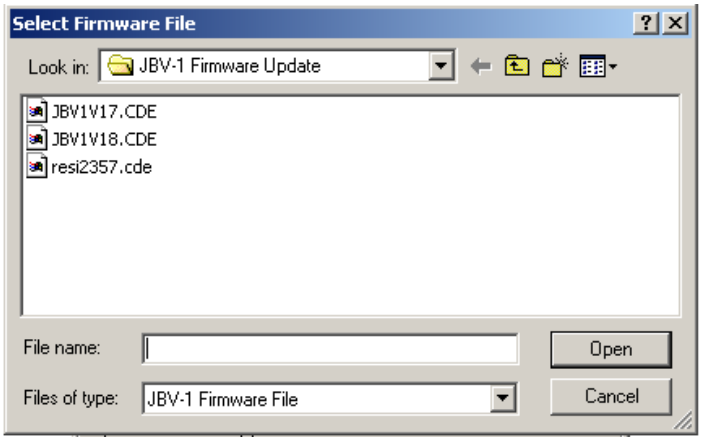
If you simply want to check the SW version, choose “Refresh Status”.



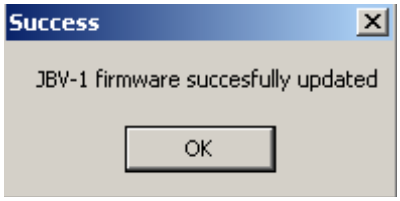
To update your JBV-1 to new version 18, choose the file ***JBV1v18.CDE*** and “Open”.

Please wait, it takes a while until you can hear a “**click**” from the JBV-1.

The older sw file JBV1v17.CDE is visible in this view only if the previous JBV-1 SW package has been installed on your computer.



After a Successful update, current JBV-1 status will be shown after you choose “OK”.



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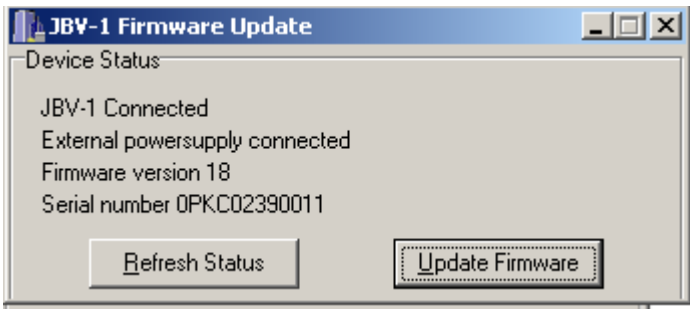

You have now updated the software of your JBV-1 docking station and it is ready for use.

If you have several docking stations you need to update, disconnect the Power & USB cables from the previous one and connect them to the next docking station. Choose “Refresh Status” to see the current SW version and then “Update Firmware” to update the SW.

After you have updated all docking stations, close the “JBV-1 Firmware Update” dialog.

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Quick Guide for Tuning RM-4/RM-5 Phones with Phoenix

- **If baseband tunings are needed, they should be made before the RF tunings**.
- **RF tunings must be made in the same order as shown in this document.** The order of the menu items in the Phoenix service software may be different.
- Avoid unnecessary tuning – factory tuning values are always the most accurate ones.
- Views in this document may change as the service software is developed. Please refer to the Phoenix help files, phone model specific service manual and bulletins for help.

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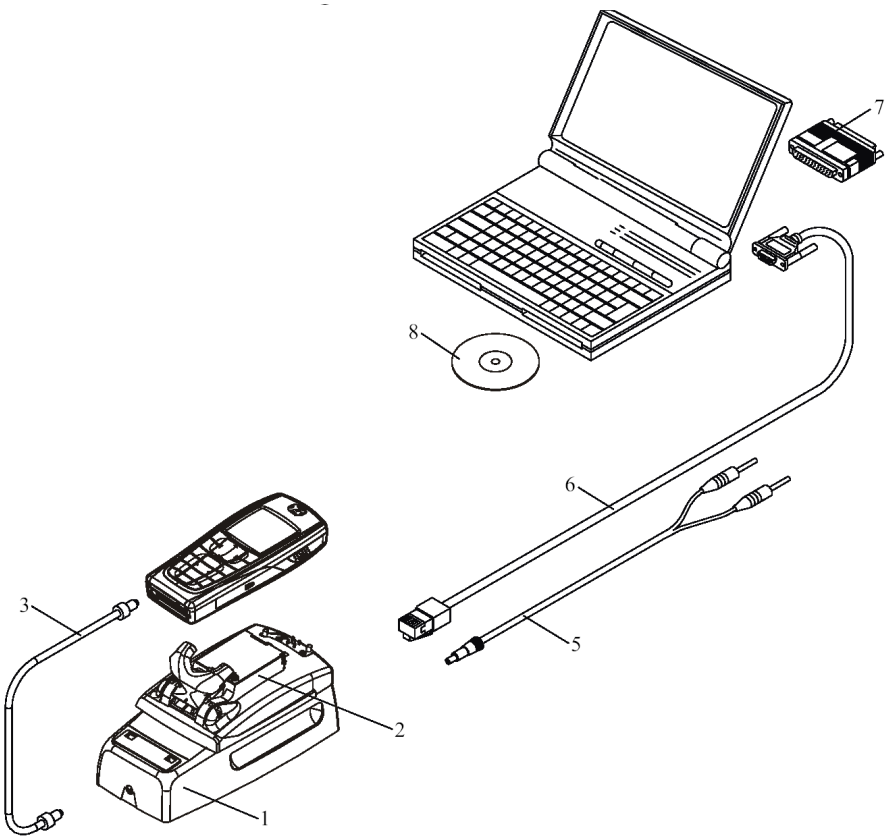
Service Tool Concept For Baseband Tunings

EM calibrations should be carried out in JBV-1 Docking Station equipped with DA-10 Adapter.

Power to JBV-1 should be supplied from an external DC power supply, not FPS-8 prommer.

Maximum input voltage is 16 V DC, nominal input for tunings is +12V DC.

.



Item	Accessory type	Service Accessory	Product code
1	JBV-1	Docking Station	0770298
2	DA-19	Docking Station adapter	0770674
3	SCB-3	DC-DC Cable	0730114
5	PCS-1	DC power cable	0730012
6	DAU-9S	Service FBUS cable	0730108
7	PKD-1	Software protection key	0750018
8	Service SW	CD-ROM	

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Baseband Tunings

Energy Management Tuning

External power supply needed.

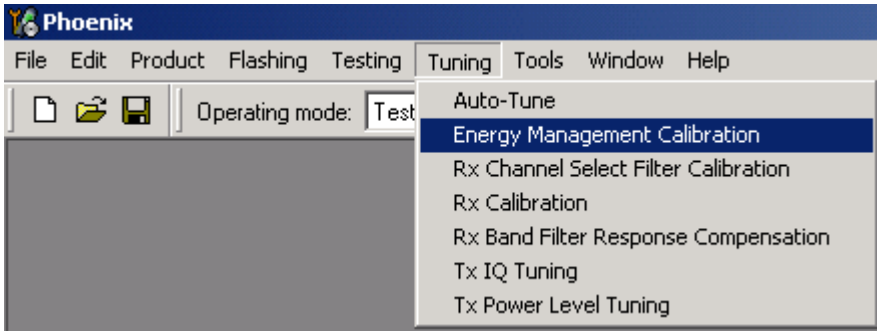
EM Calibration is used for calibrating Battery and Charger settings of the phone.

Preparation for EM Calibration:

- Connect the DC Cable SCB-3 between JBV-1 and Vin of phone for charger calibration.
- Connect 12…15 V from Power Supply to JBV-1.

NOTE! Check that connection is F-BUS (doesn't work with M-BUS!).

Select **Tuning => Energy Management Calibration**



Energy Management values to be calibrated are checked.

Select "**Read from Phone**" to show current values in the phone memory and to check that the communication with phone works.

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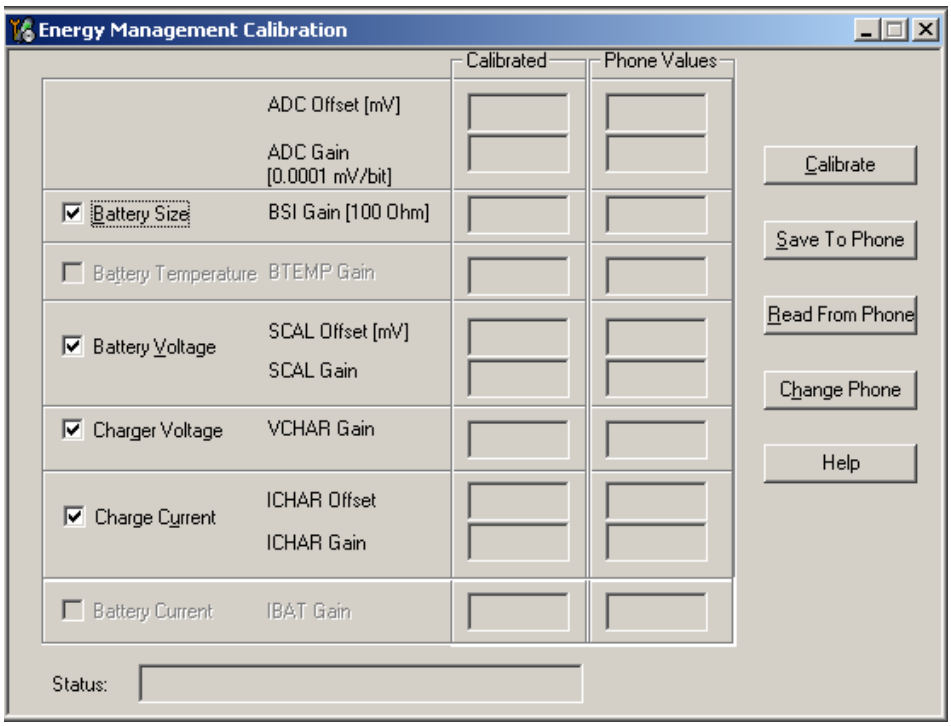
Select “**Calibrate**” to run selected calibrations..



Limits for Energy Management Calibrations:

Parameter	Min.	Max	Note
ADC gain	25400	29000	VBatt, BSI, BTemp
DC offset	-50	50	ADC voltage offset
BSI gain	970	1100	ADC BSI calibration gain
BTEMP gain	2075	2275	ADC BTEMP calibration gain
VBAT gain	10000	11000	ADC VBATT Voltage gain
VBAT offset	2300	2900	ADC VBATT Voltage offset scale
VCHAR	58000	62000	Charge voltage
ICHAR	4050	4800	charge current

If values shown are within limits select “**Save To Phone**” to save values to phone.

NOTE! Only values of checked tunings (Battery size, Battery Temperature etc…) will be saved.

Close the “**Energy Management Calibration**” dialog to end tuning.

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Service Tool Concept for RF Tunings

All RF tunings must be carried out in the MJ-15 Module Jig.

JBV-1 Docking station is equipped with DA-10 Docking Station Adapter and SA-41 RF adapter can only be used for quick testing, not tuning .

Power to MJ-15 or JBV-1 should be supplied from an external DC power supply, not FPS-8 prommer.

Remember cable attenuation when setting required RF levels.

MJ-15 input voltages:

- Maximum + 12 VDC
- Nominal input for RF tunings is + 8 V DC

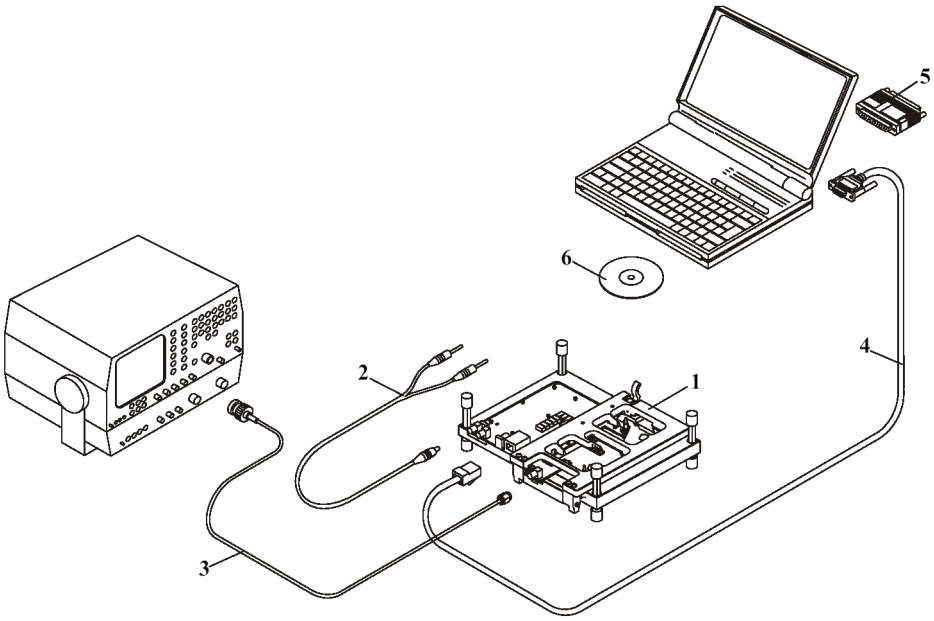

Figure 1: RF tuning setup

Item:	Service accessory:	Type:	Product code:
1	Module jig	MJ-15	0770739
2	DC power cable	PCS-1	0730012
3	Modular cable	XRF-1	0730085
4	Service Mbus cable	DAU-9S	0730108
5	Software protection key	PKD-1	0750018
6	Service SW	CD-ROM	

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Receiver tunings

RX Channel Select Filter Calibration

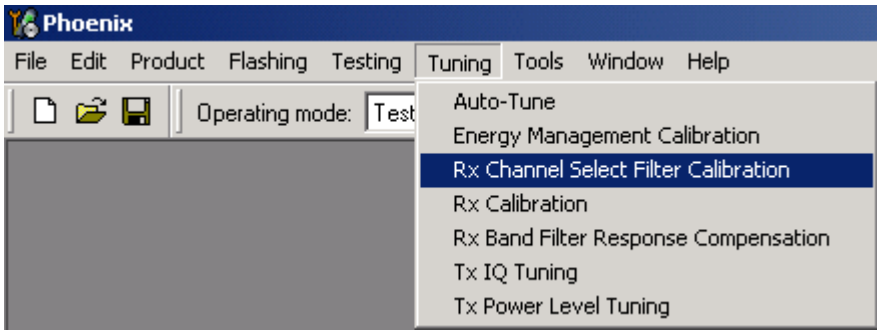
Extra equipment / external RF signal is not needed.

This calibration must be done before other RX calibrations.

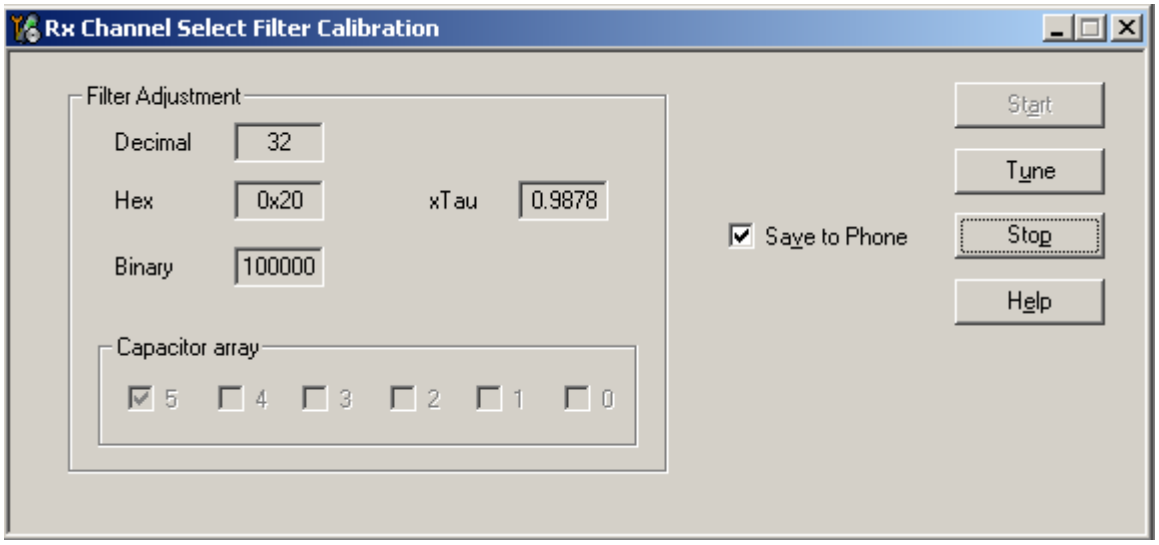
This function is used to calibrate RX channel select filter in GSM Phones.

Rx Channel select filter is tuned only in one (the lowest) band = Single calibration for both bands.

Select **Tuning => Rx Channel select filter calibration**



Press "**Tune**" to start the tuning.



Values will be saved to phone when the "**Save to Phone**" tick box is checked.

If the "**Save to Phone**" tick box is *not* checked, the values are not saved to the phone when you stop the tuning or exit the dialog.

Tuning values should be 0…31

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Select “**Stop**”

Close the “**RX Channel Select Filter Calibration**“ dialog to end the tuning.

RX Calibration

RF generator is needed.

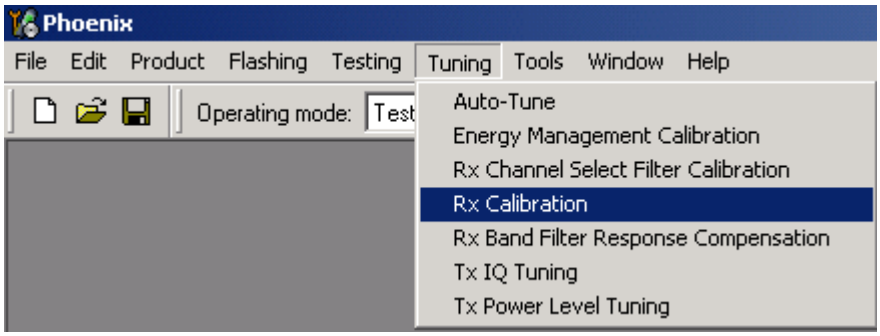
This tuning performs RX Calibration.

RX Calibration starts at EGSM (GSM900), then continues to RX Calibration at GSM1800 band.

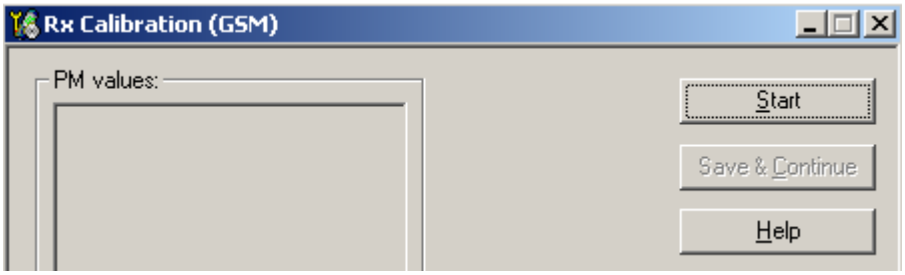
AFC tuning is carried out while the EGSM (GSM900) band RX Calibration is performed.

Remember to take jig and cable attenuations into account!

Select **Tuning => Rx calibration**



Press "**Start**" to begin.



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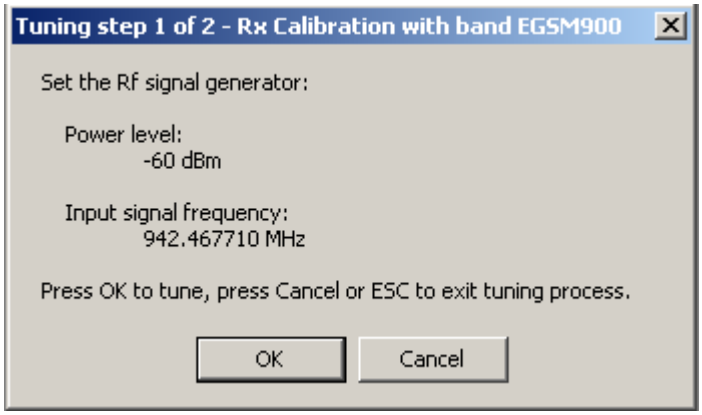
Set the RF generator to required frequency => **OK.**


Tuning step 1 of 2 - Rx Calibration with band EGSM900
Set the Rf signal generator:
Power level:
-60 dBm
Input signal frequency:
942.467710 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

Tuning values and ADC readings will be shown.

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Table 1: Typical values and limits in (GSM900) RX Calibration

EGSM (GSM900)	Typical value	Limits
VCXO cal.	571	128…767
AFC value	3034	2950…3150
Slope C1	2819	1500…3500
Slope C2	-487	-700…-300
Slope C3	1	Always 1
RSSI0	62.4	57…67
RSSI1	68.4	63…73
RSSI2	74.4	69…79
RSSI3	80.4	75…85
RSSI4	86.4	81…91
RSSI5	96.4	91…101
RSSI6	102.4	97…107
RSSI7	108.4	103…113
RSSI8	114.4	109…119
RSSI9	120.4	115…125
RSSI10	126.4	121…131
RSSI11	132.4	127…137
RSSI12	138.4	133…143
RSSI13	144.4	139…149
RSSI14	150.4	145…155

Tuning will automatically move to the next band (GSM 1800) when you press “**Save & Continue**”.

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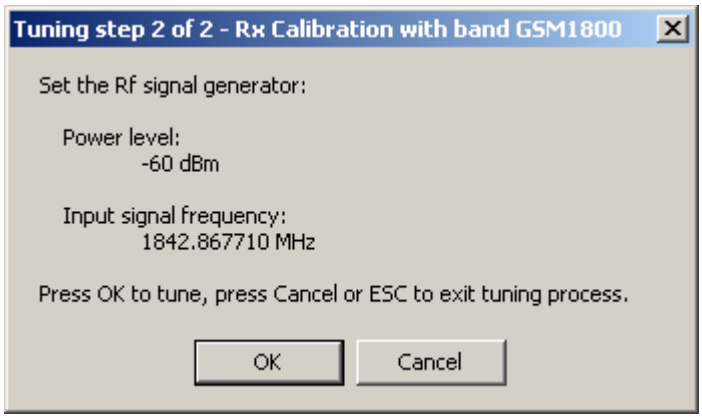
When asked, set the RF generator to required GSM 1800 frequency => **OK.**


Tuning step 2 of 2 - Rx Calibration with band GSM1800
Set the Rf signal generator:
Power level:
-60 dBm
Input signal frequency:
1842.867710 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

Tuning values and ADC readings will be shown.

Table 2: Typical values and limits in (GSM1800) RX Calibration

GSM1800	Typical value	Limits
RSSI0	60.1	55…65
RSSI1	66.1	61…71
RSSI2	72.1	67…77
RSSI3	78.1	73…83
RSSI4	84.1	79…89
RSSI5	93.1	87…97
RSSI6	99.1	93…103
RSSI7	105.1	99…109
RSSI8	111.1	105…115
RSSI9	117.1	111…121
RSSI10	123.1	117…127
RSSI11	129.1	123…133
RSSI12	135.1	129…139
RSSI13	141.1	135…145
RSSI14	147.1	141…151

Tuning will be completed when you press **“Save & Continue”.**

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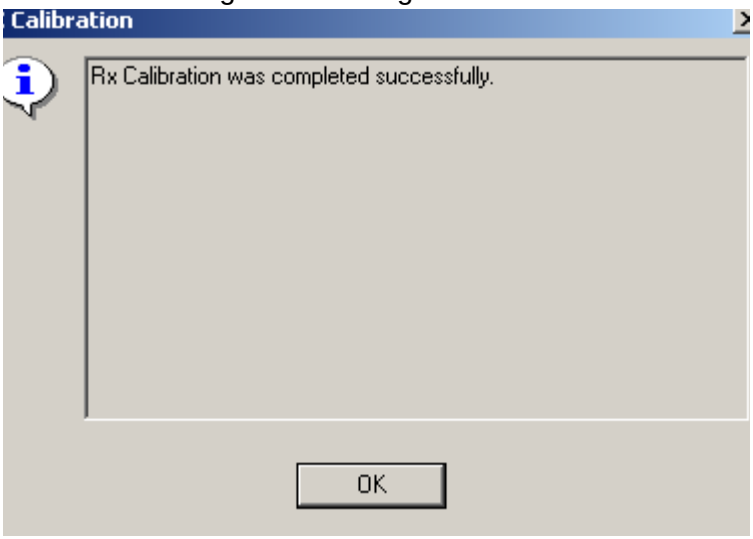
Close the “**RX – Calibration**” dialog to end tuning.



RX Band Filter Response Compensation

RF generator is needed.

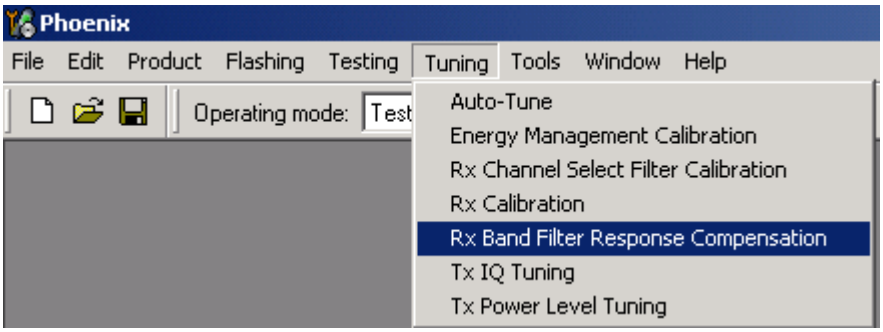
Tuning must be performed for all bands.

RX Band Filter Response Compensation starts at EGSM (GSM900), then continues at GSM1800 band.

NOTE! Remember to do RX calibration before doing Rx Band Filter Response Compensation!

Remember to take jig and cable attenuations into account!

Select **Tuning => Rx Band Filter Response Compensation**.



Select "**Manual tuning**" and “**Start**”.

You will be asked to supply nine different RF frequencies to the phone.

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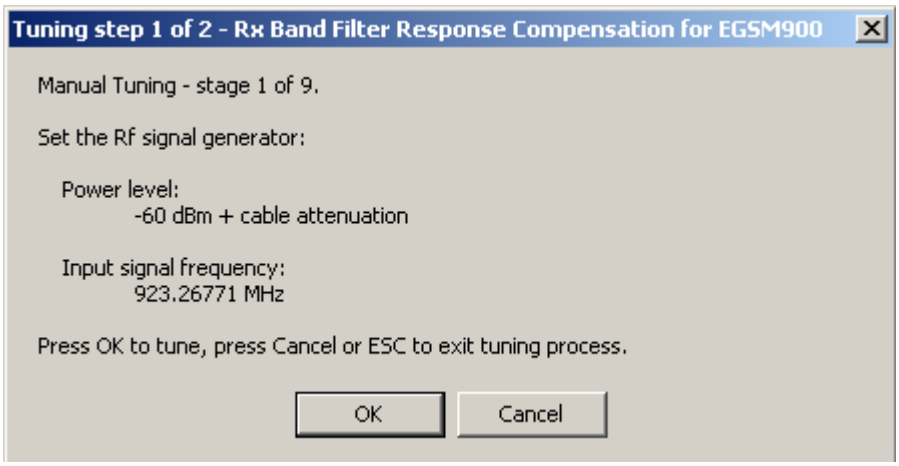
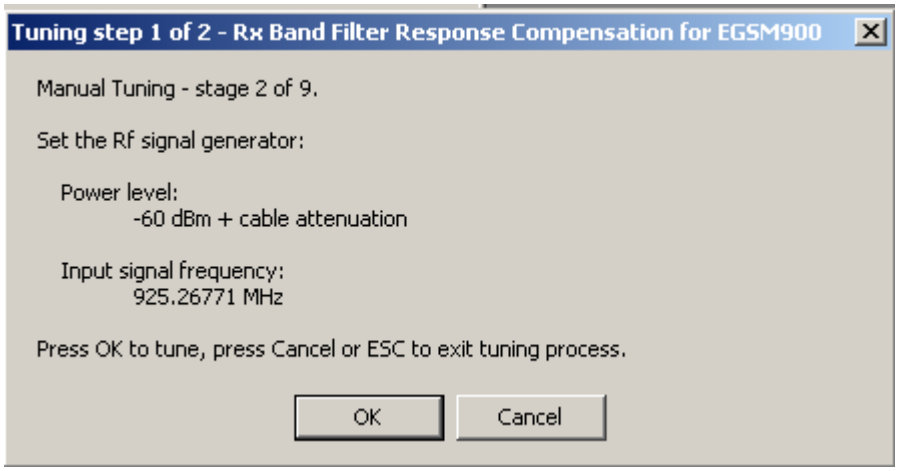
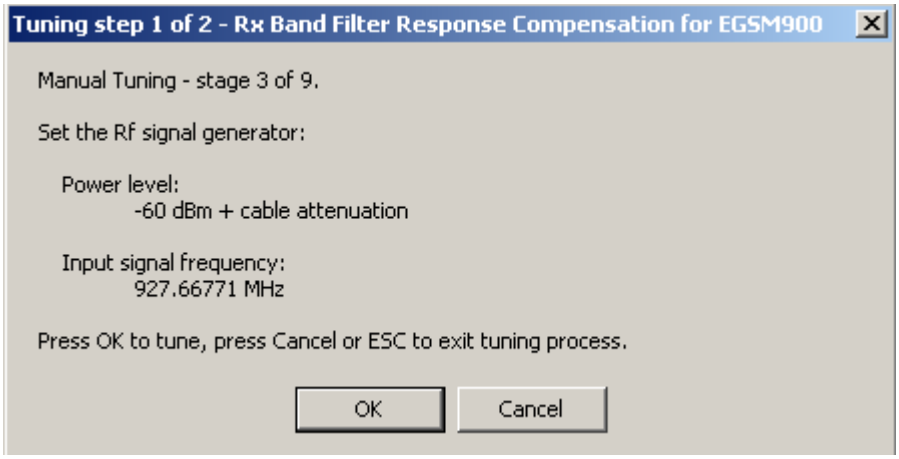
Set the 1st required frequency and level => **OK.**


Tuning step 1 of 2 - Rx Band Filter Response Compensation for EGSM900
Manual Tuning - stage 1 of 9.
Set the Rf signal generator:
Power level:
-60 dBm + cable attenuation
Input signal frequency:
923.26771 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

Set the 2nd required frequency and level => **OK.**


Tuning step 1 of 2 - Rx Band Filter Response Compensation for EGSM900
Manual Tuning - stage 2 of 9.
Set the Rf signal generator:
Power level:
-60 dBm + cable attenuation
Input signal frequency:
925.26771 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

Set the 3rd required frequency and level => **OK.**


Tuning step 1 of 2 - Rx Band Filter Response Compensation for EGSM900
Manual Tuning - stage 3 of 9.
Set the Rf signal generator:
Power level:
-60 dBm + cable attenuation
Input signal frequency:
927.66771 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

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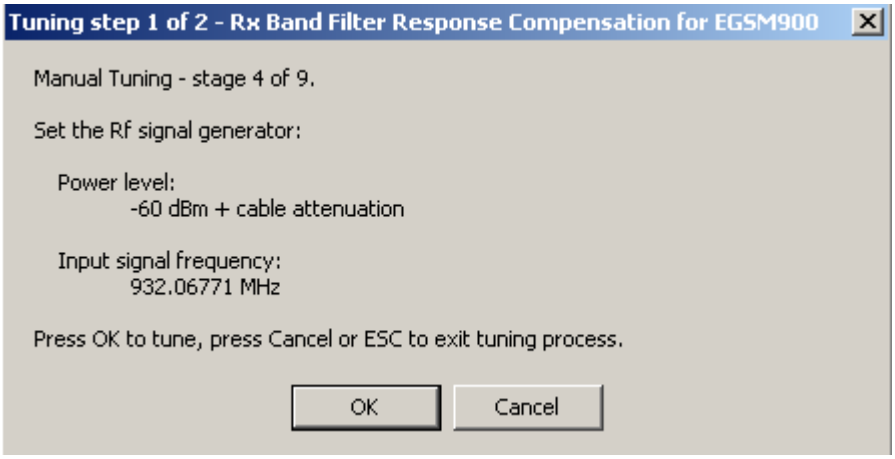
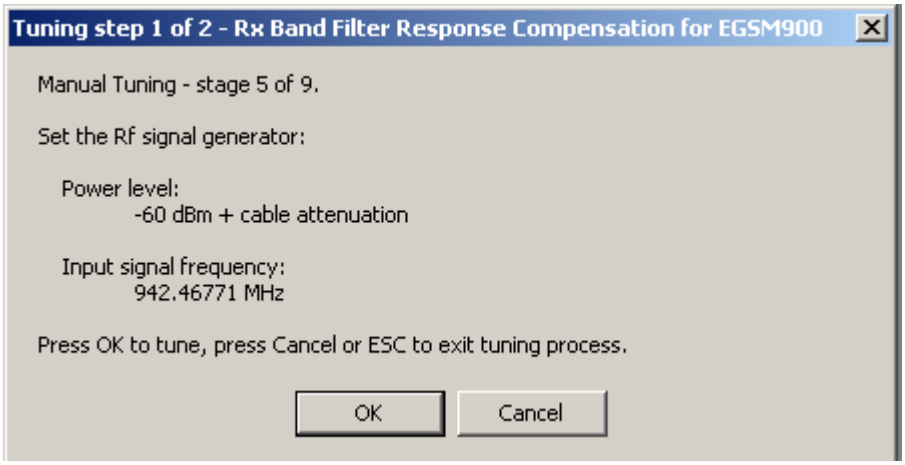
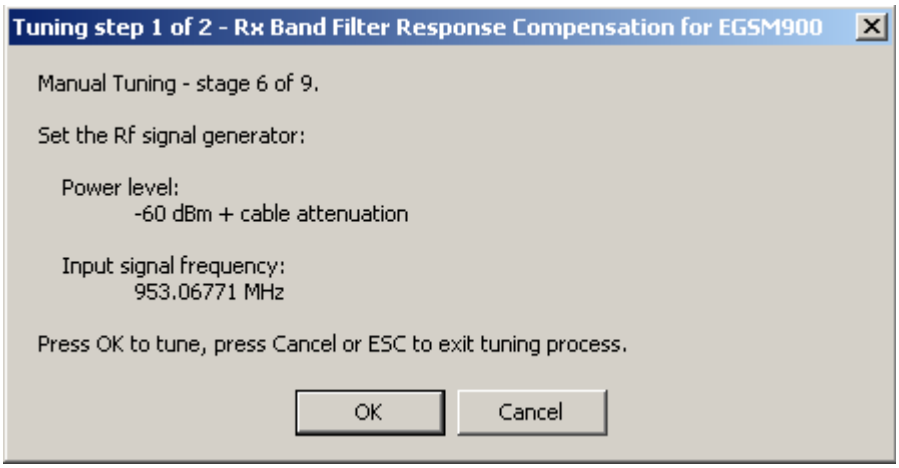
Set the 4th required frequency and level => **OK.**


Tuning step 1 of 2 - Rx Band Filter Response Compensation for EGSM900
Manual Tuning - stage 4 of 9.
Set the Rf signal generator:
Power level:
-60 dBm + cable attenuation
Input signal frequency:
932.06771 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

Set the 5th required frequency and level => **OK.**


Tuning step 1 of 2 - Rx Band Filter Response Compensation for EGSM900
Manual Tuning - stage 5 of 9.
Set the Rf signal generator:
Power level:
-60 dBm + cable attenuation
Input signal frequency:
942.46771 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

Set the 6th required frequency and level => **OK.**


Tuning step 1 of 2 - Rx Band Filter Response Compensation for EGSM900
Manual Tuning - stage 6 of 9.
Set the Rf signal generator:
Power level:
-60 dBm + cable attenuation
Input signal frequency:
953.06771 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

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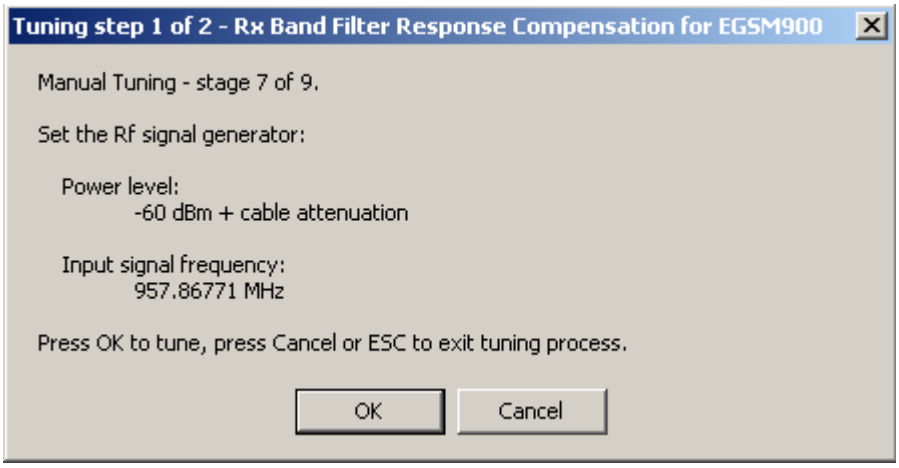
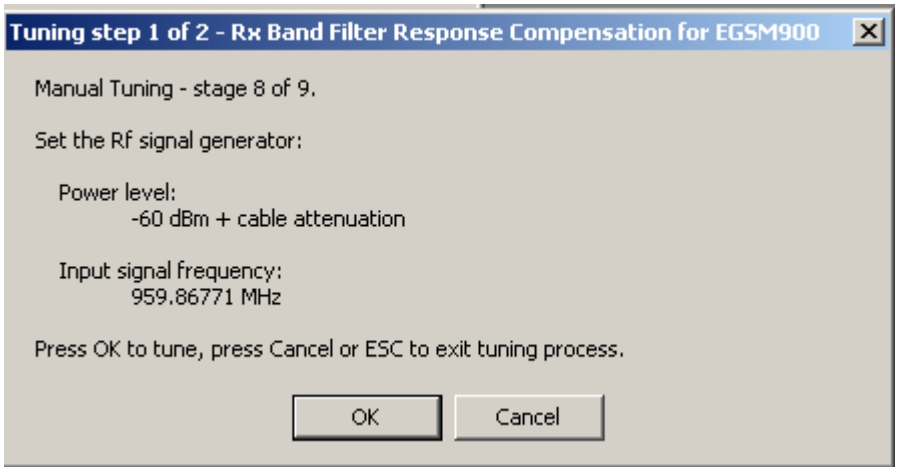
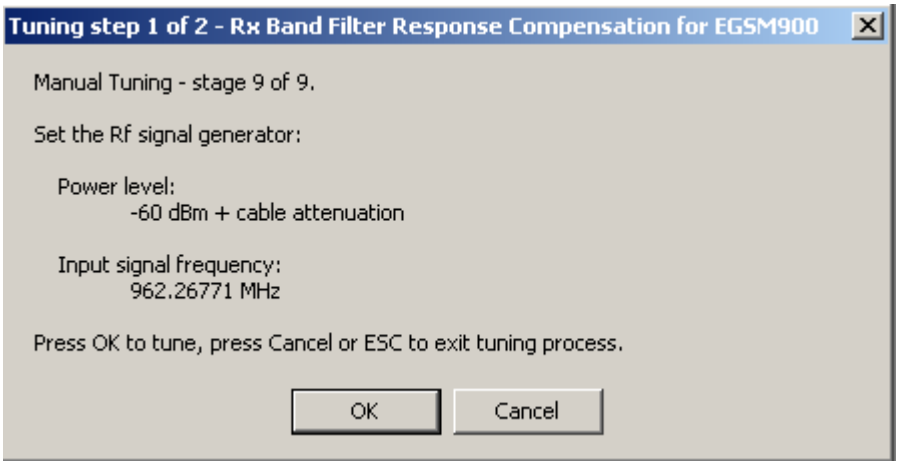
Set the 7th required frequency and level => **OK.**


Tuning step 1 of 2 - Rx Band Filter Response Compensation for EGSM900
Manual Tuning - stage 7 of 9.
Set the Rf signal generator:
Power level:
-60 dBm + cable attenuation
Input signal frequency:
957.86771 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

Set the 8th required frequency and level => **OK.**


Tuning step 1 of 2 - Rx Band Filter Response Compensation for EGSM900
Manual Tuning - stage 8 of 9.
Set the Rf signal generator:
Power level:
-60 dBm + cable attenuation
Input signal frequency:
959.86771 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

Set the 9th required frequency and level => **OK.**


Tuning step 1 of 2 - Rx Band Filter Response Compensation for EGSM900
Manual Tuning - stage 9 of 9.
Set the Rf signal generator:
Power level:
-60 dBm + cable attenuation
Input signal frequency:
962.26771 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

Tuning values and ADC readings will be shown.

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Table 3: Typical values and limits in Rx Band Filter Response Compensation EGSM900

Channel	Input frequency (MHz)	Measured level difference (dB)	Limits (dB)
965	923.26771	-0.516	-10…+5
975	925.26771	0.875	-5…+5
987	927.66771	1.469	-5…+5
1009	932.06771	1.656	-5…+5
37	942.46771	-0.094	-5…+5
90	953.06771	1.781	-5…+5
114	957.86771	0.719	5…+5
124	959.86771	-0.625	-5…+5
136	962.26771	-2.141	-10…+5

Tuning will automatically move to the next band (GSM 1800) when you press **"Save & Continue".**

Repeat the same steps as for the EGSM900 band above.

Table 4: Typical values and limits in Rx Band Filter Response Compensation GSM1800

Channel	Input frequency (MHz)	Measured level difference (dB)	Limits (dB)
497	1802.26771	-0.672	-10…+5
512	1805.26771	0.109	-5…+5
535	1809.86771	0.781	-5…+5
606	1824.06771	0.781	-5…+5
700	1842.86771	-0.266	-5…+5
791	1861.06771	0.234	-5…+5
870	1876.86771	0.563	-5…+5
885	1879.86771	-0.016	-5…+5
908	1884.46771	-2.141	-10…+5

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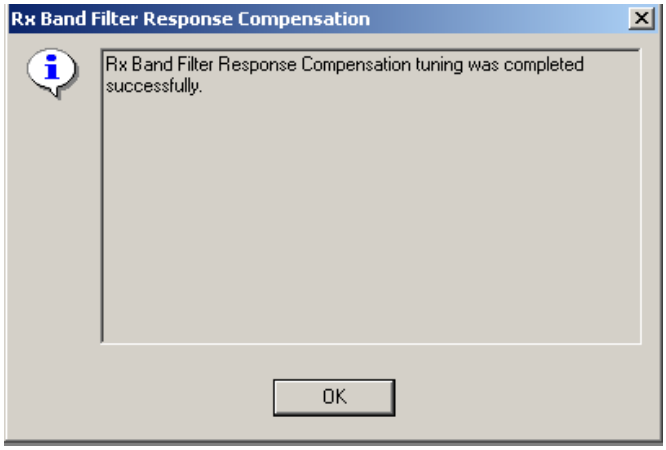
Tuning will be completed when you press **“Save & Continue”.**



Close the “**RX Band Filter Response Compensation**” dialog to end the tuning.

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Transmitter Tunings

TX I/Q Tuning

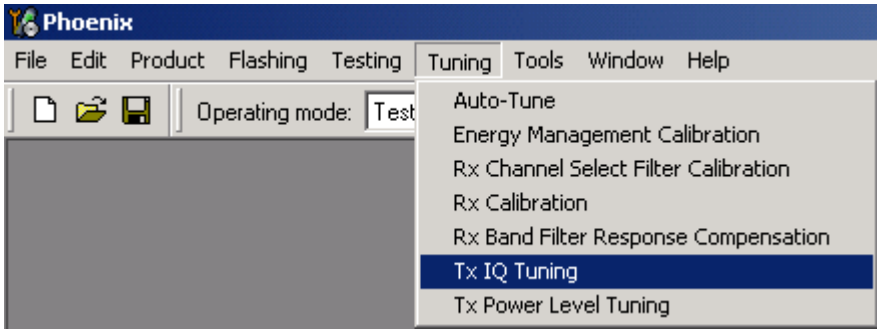
Spectrum analyzer is needed.

Tx IQ Tuning allows changing the Tx I DC Offset, Tx Q DC Offset, Amplitude difference and Phase difference.

TX I/Q tuning starts at GSM900, then continues to RX Calibration at GSM1800 band.

Remember to take jig and cable attenuations into account!

Select **Tuning => TX IQ Tuning**



Select "**Start**".

The tuning is carried out by setting each of the sliders to the desired value. The sliders can be changed only when the tuning is ongoing.

The order of tuning should be same as the order of the sliders e.g. the Tx I DC Offset is tuned first and Phase difference is tuned last.

Use <= , =>, PgUp or PgDn keys.

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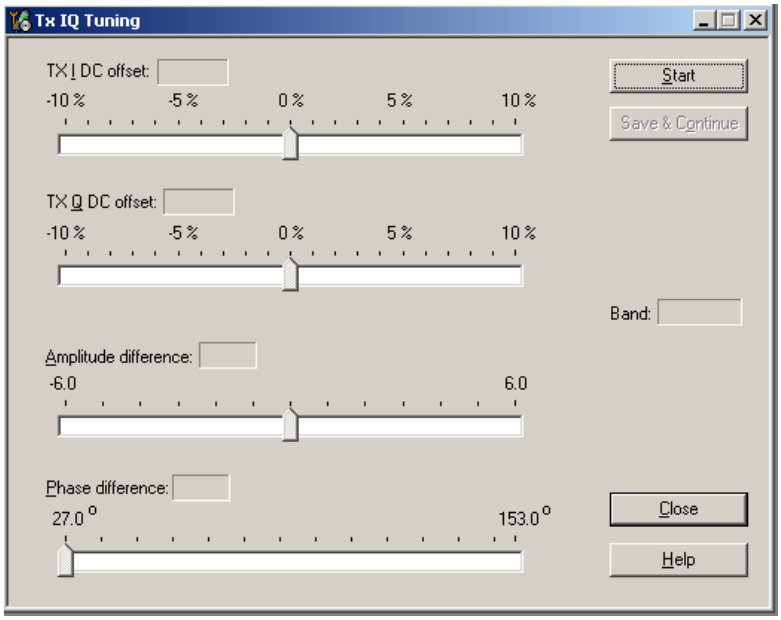
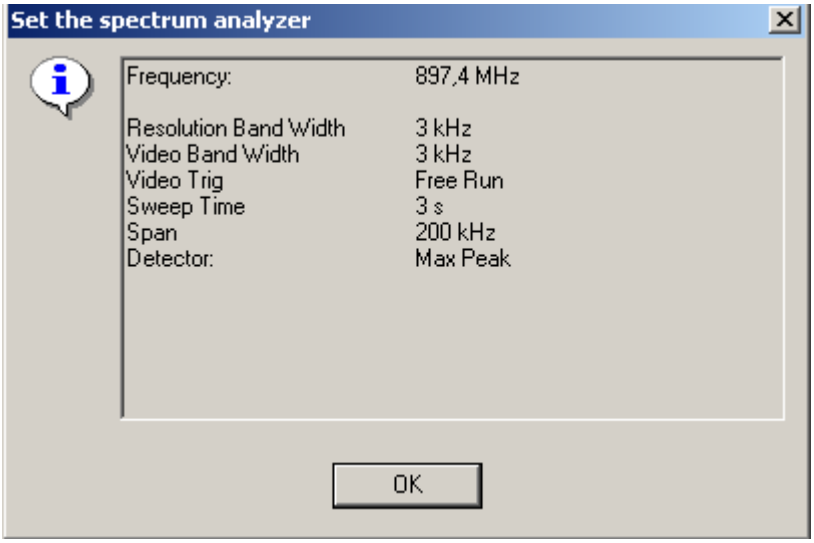


Set the spectrum analyzer to the required settings => **OK.**



Tune the LO leak to the minimum with TXI/TXQ DC offset control (**f0 on spectrum analyzer screen**).

Tune wrong sideband to minimum using Amplitude/Phase difference controls (**f0+68kHz on spectrum analyzer screen**).

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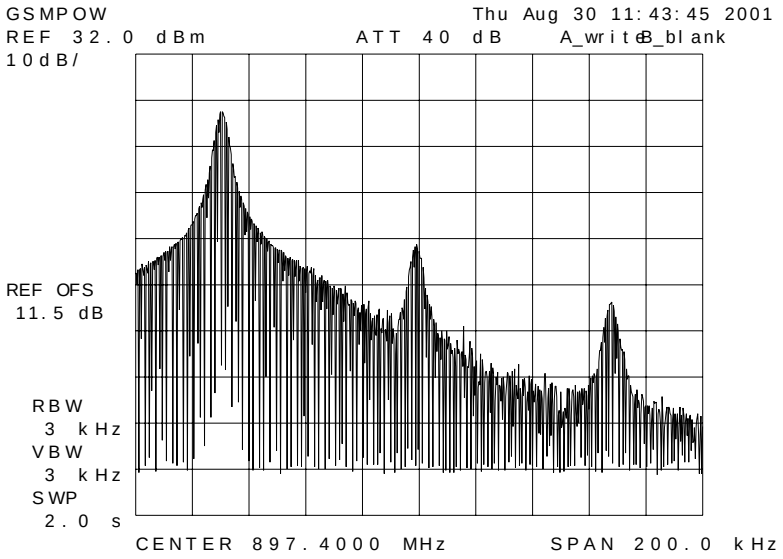
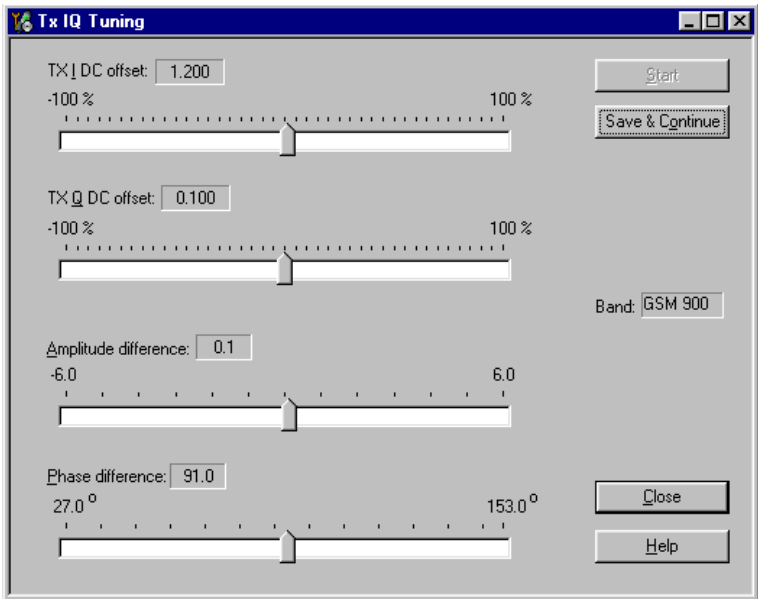


Table 5: Typical TX IQ Tuning Values and tuning limits GSM 900

I DC Offset	-2.5…+0.5	-6…+6
Q DC Offset	-2.5…+0.5	-6…+6
Amplitude difference	-0.2…+0.2	-1…+1
Phase difference	88.0°….92.0°	80°…100°

Tuning will automatically move to the next band (GSM 1800) when you press "**Save & Continue**".



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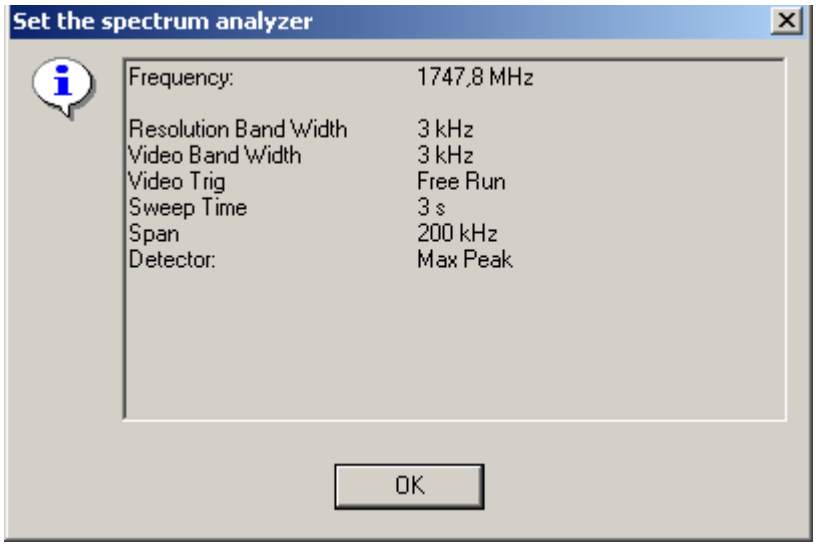
Set the spectrum analyzer to the required settings and repeat the same steps as for the EGSM900 band above.



Repeat the same steps as for EGSM900 band.

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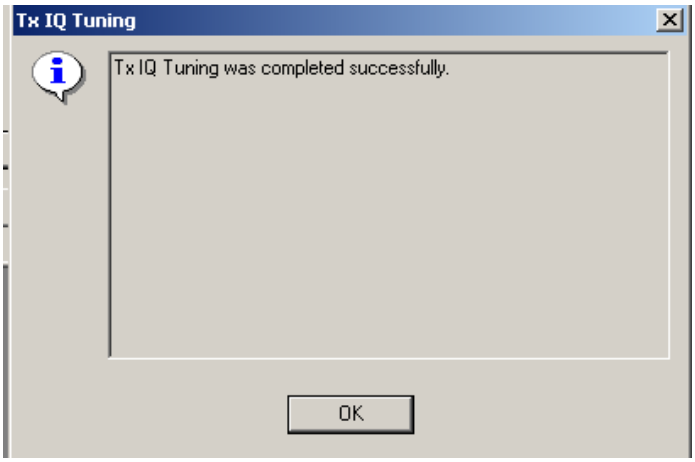
Table 6: Typical TX IQ Tuning Values and tuning limits GSM1800:

I DC Offset	-3.0…0.0	-6…+6
Q DC Offset	-1.5…+1.0	-6…+6
Amplitude difference	-0.5…+0.0	-1…+1
Phase difference	90.0°…97.0°	80°…100°

Tuning values and ADC readings will be shown and tuning will be completed when you press “Save & Continue”.

Choose “OK” to close the “TX I/Q Tuning” dialog.



TX Power Level Tuning

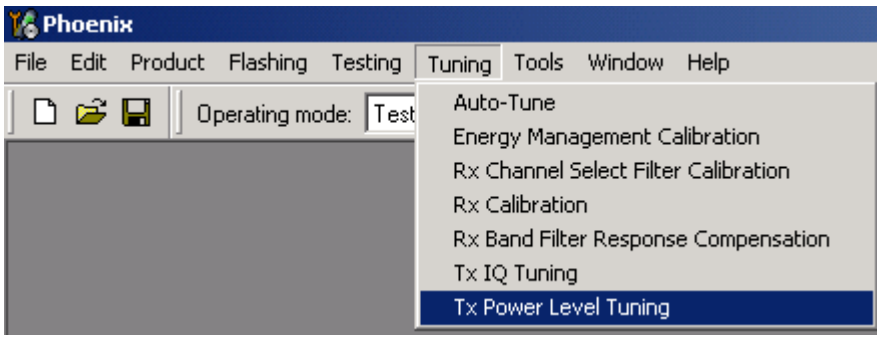
Power Meter (or Spectrum analyzer) is needed.

With Tx Power Level Tuning, the coefficients are adjusted for each power level.

Power level tuning starts at EGSM (GSM900), then continues at the GSM1800 band.

Select **Tuning => Tx power level tuning**.

Remember to take jig and cable attenuations into account!



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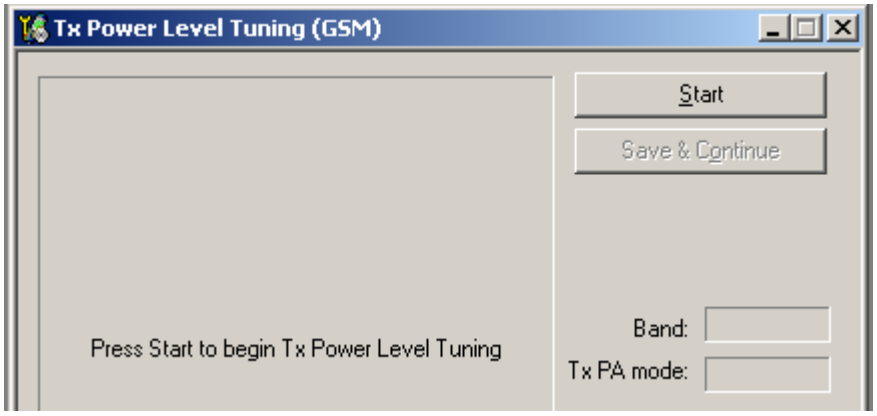
Select “**Start**”.



Tuning is started automatically from the **EGSM 900 band, “High” PA mode**.

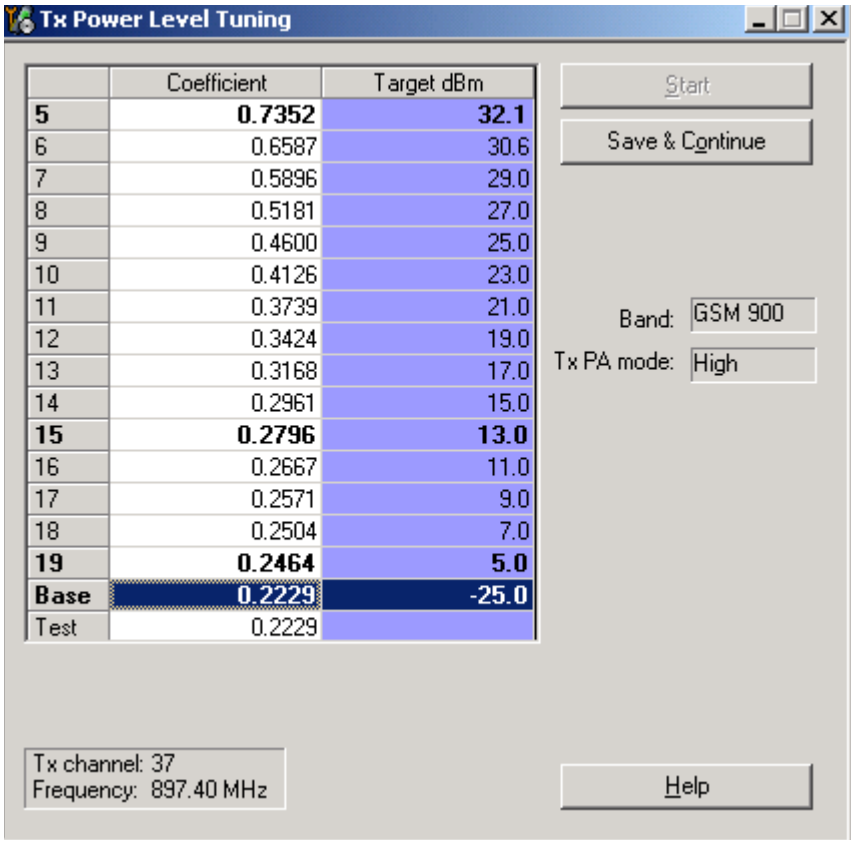
Tuning channel and frequency are shown at the bottom of the dialog.

The coefficient table lists the power level, coefficient, target dBm and DAC value for each power level.

The tuned power level can be chosen by using up and down arrows or the mouse.

The current power level is shown with inverse colors.

The tuning value can be adjusted with “-“ and “+” keys



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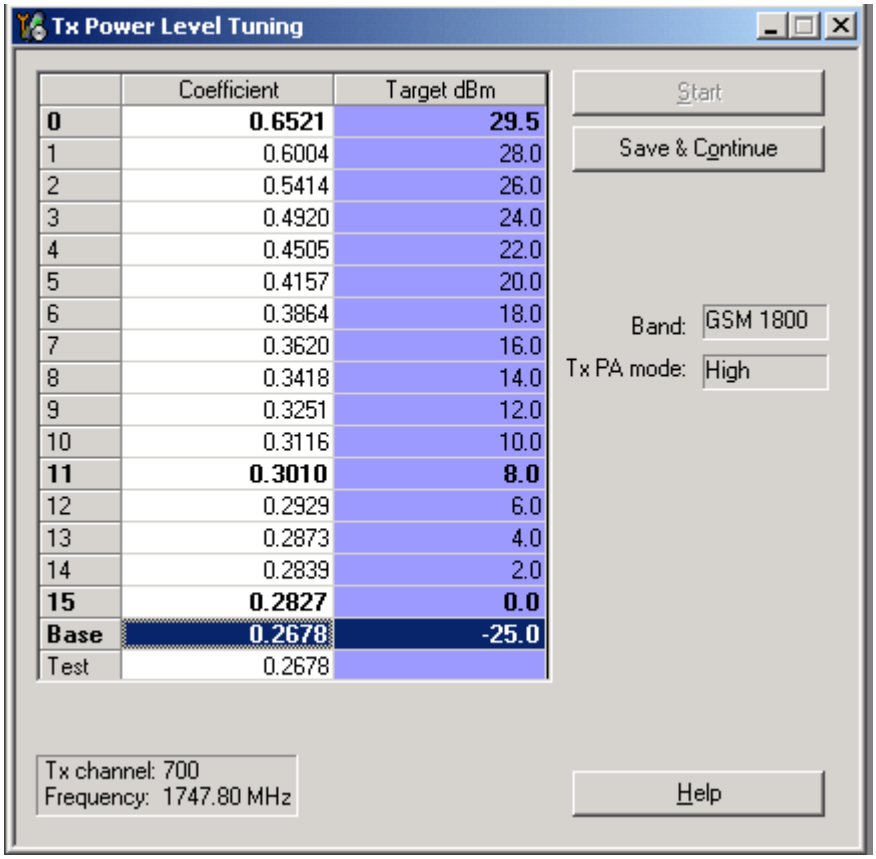
Tune base level and power levels BASE, 19,15 and 5 to target level.

When the tuning values are correct, choose "**Save & Continue"**. If all coefficients are within specified limits, tuning will continue on the GSM1800 band "High" PA mode.



Repeat the same steps as for the EGSM900 band above.

Tune the base level and power levels 15,11 and 0 to the target level.

Table 7: Typical values: GSM1800

Power level	PA high mode
0	0.650…0.710
11	-
15	0.190…0.210
Base	0.140…0.150

If the values shown are within limits, select "**Save & Continue**". Values are saved to the phone memory.

Close the "**TX Power Level Tuning**" dialog to end tuning.

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